DESIGN

Gray, Res. Div.
5/17/49 - Gift.

TRUSCON

P.3

DESIGN DIV.

LIBRARY
MAY 23 1949
U S PATENT OFFICE
PATENT OFFICE
JUL 15 1949
DESIGN DIVISION

STEEL JOISTS

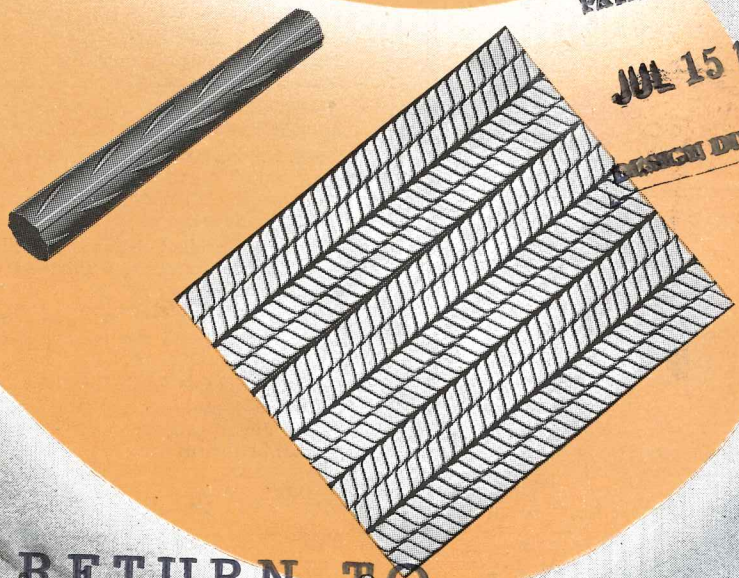
FERROBORD STEEL DECK

REINFORCING

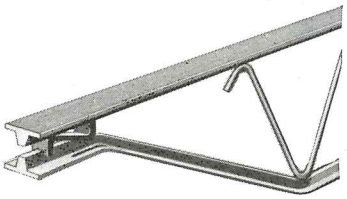
METAL LATH

1949

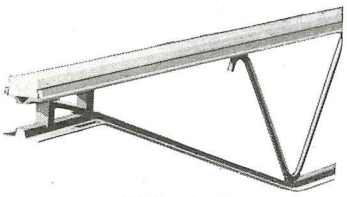
EDITION



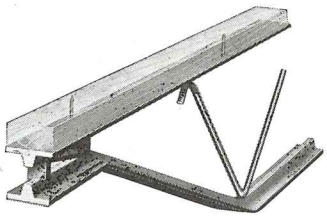
RETURN TO
DESIGN DIV.



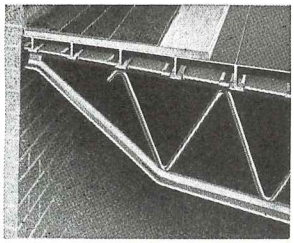
"O-T" Open Truss Steel Joist



Nailer Joist
Wood (2⅝" x 1½") strip
secured by top chord.
Types — 82W
102W, 103W, 104W
123W, 124W, 125W
145W



Nailer Joist
Wood (2⅝" x 1½") strip
secured by lag screws
Types — 126W
146W, 147W
166W, 167W



"O-T" Open Truss Steel Joists
Used for Roof Purlins

While Open Truss Steel Joists were primarily developed to provide a more rigid, fire resistant, economical and light weight floor construction, their use through the past years has proved their dependability in every type of construction. These joists are designed according to the best engineering practice and offer many distinctive advantages.

Fundamentally, the Truscon "O-T" Open Truss Steel Joist is a Warren truss having top and bottom chords of wide tee-shaped members and a plain round continuous web member. The bottom chord is continuous from end to end of joist and bent up at the ends to form the bearings. Steel joists are fabricated by means of electric machine welding under pressure, making positive connections at all joints.

The underslung design of the bearing permits maximum head-room under the supporting girders. The open web allows the passage of pipes and conduits in any direction.

In practical use, Truscon "O-T" Open Truss Steel Joists are very simple to install, being completely shop fabricated and reaching the job ready for placing. Each joist is marked to correspond with the erection diagram, thus greatly simplifying and speeding construction work.

Advantages of TRUSCON "O-T" Open Truss Steel Joists

Fire-Resistant — Fire tests prove that ¾ in. of cement or gypsum ceiling plaster protects Truscon "O-T" Open Truss Steel Joist Construction against high temperatures. The majority of insurance rating bureaus have recognized the merits of this construction and have accordingly given it a first-class fireproof classification.

Vermin-Resistant — All members of the Truscon "O-T" Open Truss Steel Joists are steel and impregnable to the attacks of insects.

Sound-Resistant — The greatly increased use of Truscon "O-T" Open Truss Steel Joist Construction in larger and more expensive types of building, and its acceptance by Architects and Engineers in all parts of the country prove that this construction fully meets the essentials of soundproofness.

Pipe and Conduit — Easily Installed — The open web of the joists permits the passage of pipes and electric conduits, within the depth of the floor, thereby making such installations very economical.

Radiant Heating — The Open Web of these joists will permit unobstructed flow of air current in any direction, and this feature is of important consideration when planning a radiant heating system.

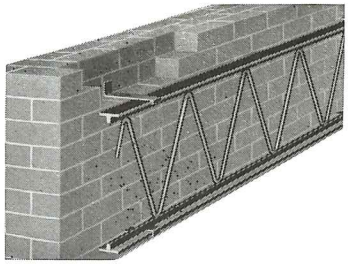
Light Weight — Easily Installed — Another feature of Open Truss Steel Joist Construction is its light weight and speed of erection. The complete shop fabrication, the absence of form work and the minimum of field work — all contribute to make steel joists the most rapidly erected fire-resistant construction.

Details of CONSTRUCTION "O-T" Joist Roof Purlins

Open Truss Steel Joists have proved to be very economical and practical for use as roof purlins supporting steel deck roofs. The method of attaching the roof to the steel joists is very simple and positive, either as shown in illustration with the use of clips or by welding the deck to the joists.

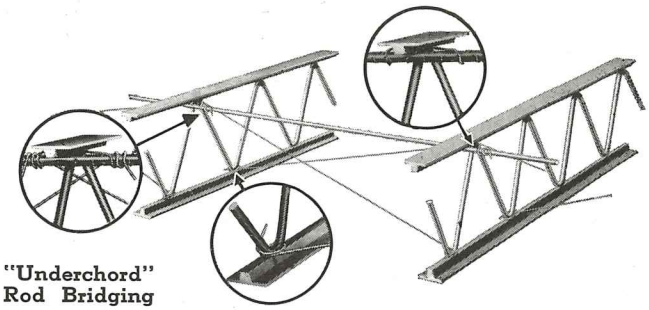
Occasionally it is desired to attach a wood roof deck to Truscon "O-T" Open Truss Steel Joists used as roof purlins. Truscon Nailer Joists can be provided to meet this requirement.

A MEMBER OF THE STEEL JOIST INSTITUTE



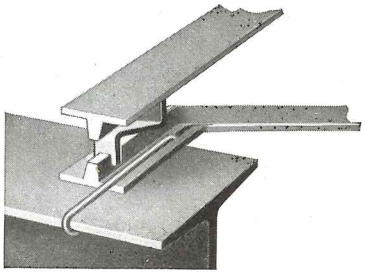
Wall Anchor P-3098

Joists parallel to masonry walls should have their top and bottom chords anchored by means of wall anchors P-3098 where each row of bridging occurs.



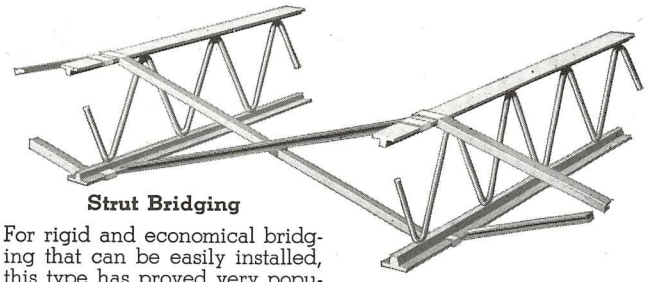
"Underchord" Rod Bridging

This type of bridging is very practical and will permit of a slight variation in joist spacings as is frequently necessary in order that joists can be spaced to avoid interference with bolt or rivet heads in supporting members, vent ducts, soil pipes, etc.



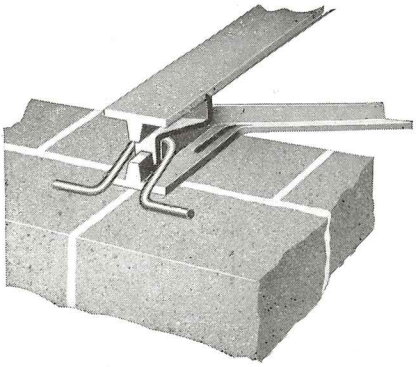
Beam Anchor P-3099

Ends of all steel joists resting on structural steel beams should be anchored by means of beam anchors P-3099.



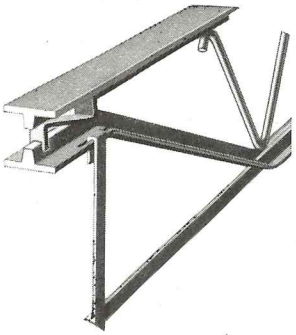
Strut Bridging

For rigid and economical bridging that can be easily installed, this type has proved very popular. It is made of ¾-in. box channels and cut to lengths to meet the exact spacing of the joists. This strut bridging holds the joists in a vertical plane, assuring accurate spacing and distribution of loads by acting in both tension and compression.



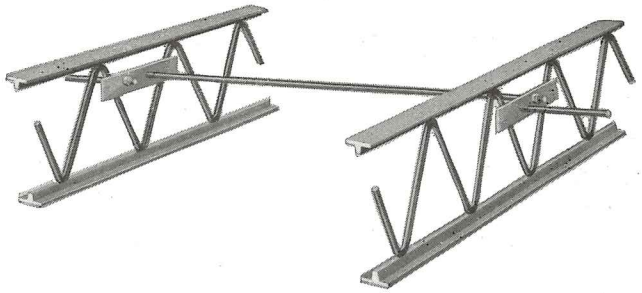
Wall Anchor P-3101

Affords additional bond between floor and wall construction when wall is of such a height or nature as to be not self-sustaining. Ends of each third joist should be anchored.



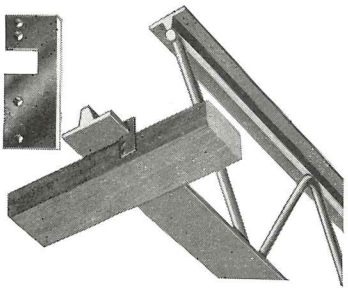
Ceiling Extension P-3100

When plastered ceilings are to be attached directly to the joists, ceiling extensions of the proper size must be provided at the ends of the joists.



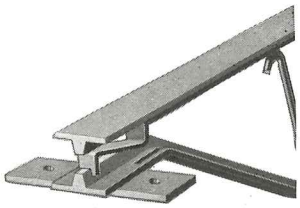
Sag Rods

When steel joists are used as purlins on inclined roofs and are placed at right angles to the slope, sag rods generally are necessary and these require sag rod plates attached to the joists. The plates are arc welded to the web members of the joists.



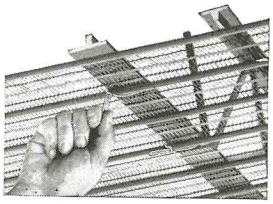
Furring Clip P-3180

Wood screeds required at right angles to the under-side of the joist can be attached by means of furring clip P-3180.



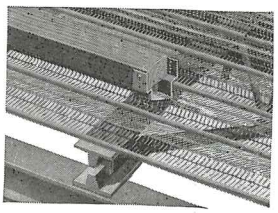
Bolted Connection P-3194

Where steel joist must be bolted to a supporting steel member, plates are shop-welded to joist ends and provided with necessary bolt holes.



Lath Clips

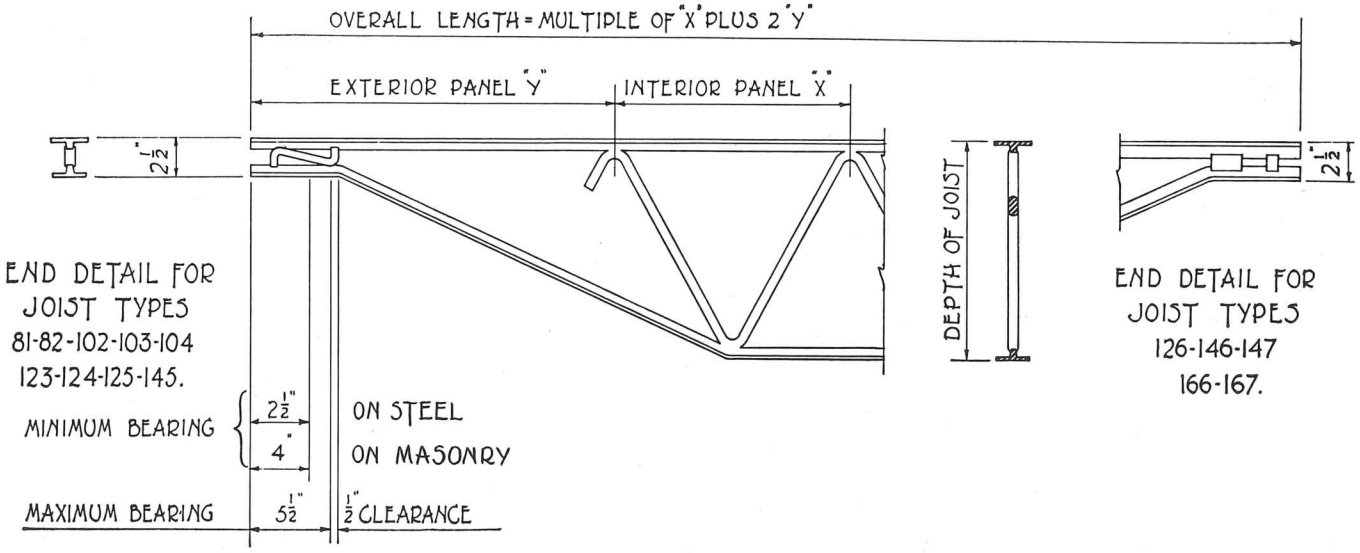
Made in different sizes to meet the different widths of chord flanges and used for attaching either top or ceiling lath. When attaching the ceiling lath, the clips should straddle the ribs of the lath.



Screed Clip P-3106

Screed Clips are used when it is desired to hold the screeds at right angles to the joists and to elevate them so that concrete can be poured beneath them. Lath clips of proper size are used to hold the screed clips in place.

DIMENSIONS AND SECTIONS

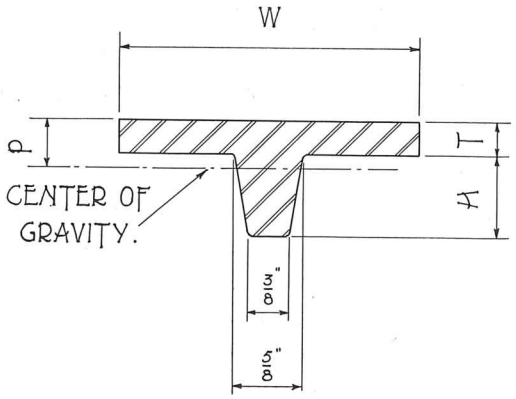


JOIST TYPE	NOMINAL JOIST DEPTH	TOP CHORD SECTION	BOTTOM CHORD SECTION	WEB PLAIN ROUND SECTION	INTERIOR PANEL DIMENSION "X"	EXTERIOR PANEL LENGTHS ARE MADE IN THE FOLLOWING VARIABLE "Y" DIMENSIONS, AND WITH THESE SUFFIX LETTERS.					
						A	B	C	D	E	F
	Inches	Number	Number	Dia. In.	Inches	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.
81	8	421	421	3/8	9	1- 2½	1- 4	1- 5½			
82	8	422	421	7/16	9	1- 2½	1- 4	1- 5½			
102	10	422	421	7/16	11⅛	1- 4⅜	1- 6⅛	1- 7⅜	1- 9⅛		
103	10	423	422	7/16	11⅛	1- 4⅜	1- 6⅛	1- 7⅜	1- 9⅛		
104	10	424	423	½	11¼	1- 4¾	1- 6¼	1- 7¾	1- 9¼		
123	12	423	422	½	13⅝	1- 7⅛	1- 8⅝	1-10⅛	1-11⅝	2- 1⅛	
124	12	424	423	½	13⅝	1- 7⅛	1- 8⅝	1-10⅛	1-11⅝	2- 1⅛	
125	12	425	424	9/16	13⅜	1- 6⅞	1- 8⅜	1- 9⅞	1-11⅜	2- 0⅞	
126	12	426	425	9/16	13⅜	1- 6⅞	1- 8⅜	1- 9⅞	1-11⅜	2- 0⅞	
145	14	425	424	9/16	15¾	1- 9¼	1-10¾	2- 0¼	2- 1¾	2- 3¼	2- 4¾
146	14	426	425	9/16	15¾	1- 9¼	1-10¾	2- 0¼	2- 1¾	2- 3¼	2- 4¾
147	14	427	426	⅝	15¼	1- 8¾	1-10¼	1-11¾	2- 1¼	2- 2¾	
166	16	426	425	⅝	17⅞	1-11⅜	2- 0⅞	2- 2⅜	2- 3⅞	2- 5⅜	2- 6⅞
167	16	427	426	⅝	17⅞	1-11⅜	2- 0⅞	2- 2⅜	2- 3⅞	2- 5⅜	2- 6⅞

NOMENCLATURE: The complete nomenclature of a joist is determined by combining the "Joist Type," number of interior "X" panels, and the proper suffix letter to indicate the exterior panel "Y" length.

Example: 125-08C represents a joist type 125 with 8 interior panels and exterior panels of "C" length, making an over-all dimension of 12'-6¾".

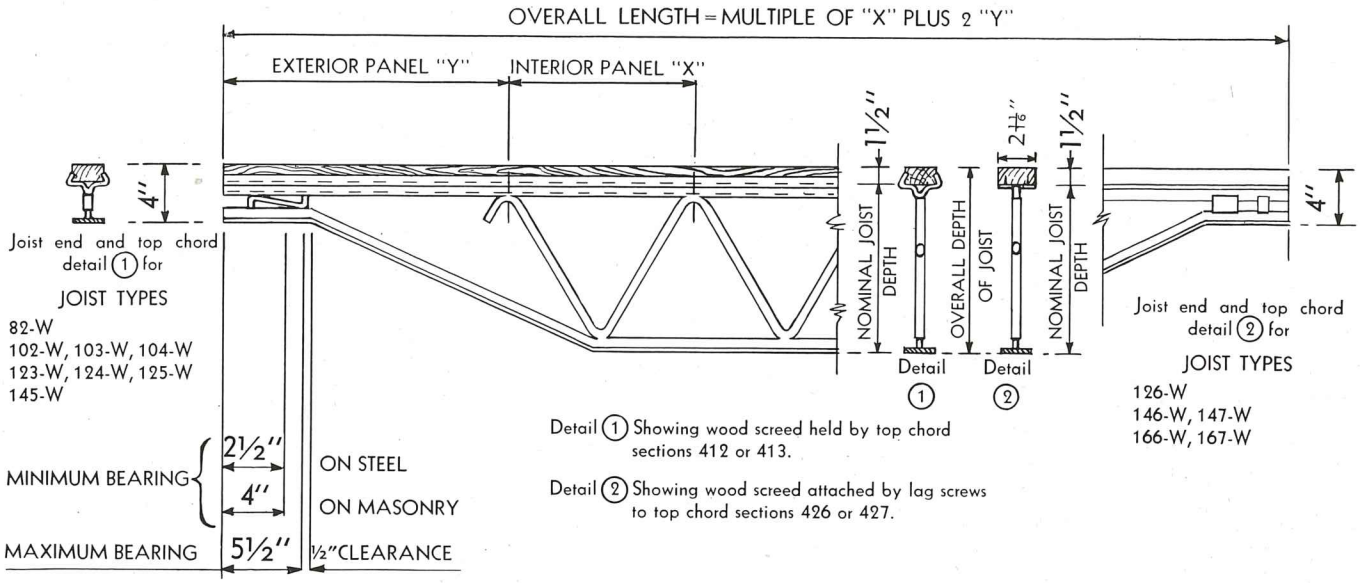
PROPERTIES OF TRUSCON "O-T" STEEL JOIST CHORD SECTIONS



SECTIONS 421 TO 427 INCLUSIVE.

SECTION	W	T	H	P	AREA	ABOUT HORIZONTAL AXIS	
						I	r
NO.	Inches	Inches	Inches	Inches	Sq. In.	In.⁴	In.
421	1⅝	.125	⅜	.175	.391	.0078	.141
422	2¼	.129	⅜	.157	.478	.0089	.137
423	2¼	.143	½	.203	.572	.0184	.179
424	2¼	.203	½	.218	.707	.0243	.186
425	2½	.248	½	.226	.870	.0305	.187
426	2½	.258	¾	.303	1.020	.0738	.269
427	2¾	.3125	¾	.308	1.234	.0894	.269

DIMENSIONS AND SECTIONS



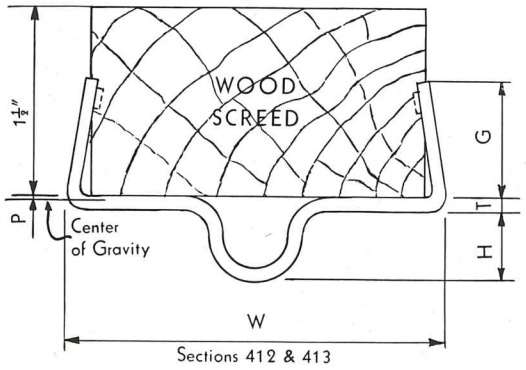
JOIST TYPE	NOMINAL JOIST DEPTH	OVERALL DEPTH OF JOIST	TOP CHORD SECTION	BOTTOM CHORD SECTION	WEB PLAIN ROUND SECTION	INTERIOR PANEL DIMENSION "X"	EXTERIOR PANEL LENGTHS ARE MADE IN THE FOLLOWING VARIABLE "Y" DIMENSIONS, AND WITH THESE SUFFIX LETTERS					
							A	B	C	D	E	F
	Inches	Inches	Number	Number	Dia. In.	Inches	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.	Ft.-In.
82-W	8	$9\frac{21}{32}$	412	421	$\frac{7}{16}$	9	1- $2\frac{1}{2}$	1- 4	1- $5\frac{1}{2}$			
102-W	10	$11\frac{1}{2}$	412	421	$\frac{7}{16}$	$11\frac{1}{8}$	1- $4\frac{5}{8}$	1- $6\frac{1}{8}$	1- $7\frac{5}{8}$	1- $9\frac{1}{8}$		
103-W	10	$11\frac{1}{2}$	412	422	$\frac{7}{16}$	$11\frac{1}{8}$	1- $4\frac{5}{8}$	1- $6\frac{1}{8}$	1- $7\frac{5}{8}$	1- $9\frac{1}{8}$		
104-W	10	$11\frac{11}{16}$	413	423	$\frac{1}{2}$	$11\frac{1}{4}$	1- $4\frac{3}{4}$	1- $6\frac{1}{4}$	1- $7\frac{3}{4}$	1- $9\frac{1}{4}$		
123-W	12	$13\frac{5}{16}$	412	422	$\frac{1}{2}$	$13\frac{5}{8}$	1- $7\frac{1}{8}$	1- $8\frac{5}{8}$	1-$10\frac{1}{8}$	1-$11\frac{5}{8}$	2-1	
124-W	12	$13\frac{5}{8}$	413	423	$\frac{1}{2}$	$13\frac{5}{8}$	1- $7\frac{1}{8}$	1- $8\frac{5}{8}$	1-$10\frac{1}{8}$	1-$11\frac{5}{8}$	2-1	
125-W	12	$13\frac{5}{16}$	413	424	$\frac{9}{16}$	$13\frac{3}{8}$	1- $6\frac{7}{8}$	1- $8\frac{3}{8}$	1- $9\frac{7}{8}$	1-$11\frac{3}{8}$	2-$0\frac{7}{8}$	
126-W	12	$13\frac{5}{8}$	426	425	$\frac{9}{16}$	$13\frac{3}{8}$	1- $6\frac{7}{8}$	1- $8\frac{3}{8}$	1- $9\frac{7}{8}$	1-$11\frac{3}{8}$	2-$0\frac{7}{8}$	
145-W	14	$15\frac{3}{8}$	413	424	$\frac{9}{16}$	$15\frac{3}{4}$	1- $9\frac{1}{4}$	1-$10\frac{3}{4}$	2- $0\frac{1}{4}$	2- $1\frac{3}{4}$	2-$3\frac{1}{4}$	2-$4\frac{3}{4}$
146-W	14	$15\frac{11}{16}$	426	425	$\frac{9}{16}$	$15\frac{3}{4}$	1- $9\frac{1}{4}$	1-$10\frac{3}{4}$	2- $0\frac{1}{4}$	2- $1\frac{3}{4}$	2-$3\frac{1}{4}$	2-$4\frac{3}{4}$
147-W	14	$15\frac{17}{32}$	427	426	$\frac{5}{8}$	$15\frac{1}{4}$	1- $8\frac{3}{4}$	1-$10\frac{1}{4}$	1-$11\frac{3}{4}$	2- $1\frac{1}{4}$	2-$2\frac{3}{4}$	
166-W	16	$17\frac{15}{32}$	426	425	$\frac{5}{8}$	$17\frac{7}{8}$	1-$11\frac{3}{8}$	2- $0\frac{7}{8}$	2- $2\frac{3}{8}$	2- $3\frac{7}{8}$	2-$5\frac{3}{8}$	2-$6\frac{7}{8}$
167-W	16	$17\frac{25}{32}$	427	426	$\frac{5}{8}$	$17\frac{7}{8}$	1-$11\frac{3}{8}$	2- $0\frac{7}{8}$	2- $2\frac{3}{8}$	2- $3\frac{7}{8}$	2-$5\frac{3}{8}$	2-$6\frac{7}{8}$

PATENT OFFICE
JUL 15 1949
DESIGN DIVISION

NOMENCLATURE: The complete nomenclature of a joist is determined by combining the "Joist Type," number of interior "X" panels, and the proper suffix letter to indicate the exterior panel "Y" length.

Example: 125W-08C represents a joist type 125W with 8 interior panels and exterior panels of "C" length, making an overall dimension of 12'-6¾".

PROPERTIES OF TRUSCON "O-T" JOIST CHORD SECTIONS NUMBERS 412 AND 413 EXCLUSIVE OF WOOD SCREED



SECTION NUMBER	W	H	T	G	P	AREA		r
	Inches	Inches	Inches	Inches	Inches	Sq. In.	In.⁴	In.
412	3	.438	.125	.625	.025	.58	.0406	.265
413	$3\frac{1}{16}$	.562	.156	.875	.004	.826	.1207	.382

NOTE: For properties of Sections 421 to 427 inclusive, see Page 4.

LOADING TABLE

The designs of all Truscon "O-T" Open Truss Steel Joists and Nailer Joists have been checked and approved by the Steel Joist Institute as being in strict conformity with the Institute specifications.

The following table gives the TOTAL safe uniformly-distributed load-carrying capacities of Truscon "O-T" Open Truss Steel Joists and Nailer Joists at various spacings. The weight of DEAD loads must in all cases be deducted to determine the LIVE load-carrying capacities of the Joists. When Nailer Joists (those with suffix W) are used, they should not be spaced farther apart than the safe span of the wood deck or other material used over them.

TABLE ONE

Clear Span	Joist Type	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																
			12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″
6′-0″	81	3200	530	457	400	376	356	337	320	305	291	278	267	213	178	153	134	106	89	76
7′-0″	81	2810	402	344	301	283	268	254	241	229	219	209	202	160	134	115	101	80	67	57
8′-0″	81	2460	308	264	231	217	205	194	184	176	168	160	154	123	103	88	77	61	51	44
	82, 82W	3800	475	407	356	335	316	300	285	271	259	248	238	190	158	136	119	95	79	68
9′-0″	81	2180	243	208	182	171	162	153	145	138	132	127	121	97	81	69	61	48	40	34
	82, 82W	3800	422	362	316	298	282	266	254	242	230	220	211	169	141	121	106	84	70	60
10′-0″	81	1970	197	169	148	139	131	125	118	113	108	103	99	79	66	57	50	39	33	28
	82, 82W	3500	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50
	102, 102W	3800	380	326	285	268	253	240	228	217	207	198	190	152	127	109	95	76	63	54
	103, 103W	3900	390	334	292	275	260	246	234	223	213	203	195	156	130	112	98	78	65	56
	104, 104W	4400	440	377	330	312	293	278	264	252	240	230	220	176	147	126	110	88	73	63
11′-0″	81	1780	162	139	121	114	108	102	97	92	89	85	81	65	54	46	41	32	...	...
	82, 82W	3180	289	248	217	205	193	183	174	165	158	151	145	116	97	83	73	58	48	41
	102, 102W	3800	346	297	259	244	230	218	208	197	189	180	173	138	115	99	87	69	57	49
	103, 103W	3900	355	304	266	250	236	224	213	202	194	185	178	142	118	101	89	71	59	50
	104, 104W	4400	400	343	300	283	267	253	240	228	218	208	200	160	134	114	100	80	67	57
12′-0″	81	1635	137	117	102	96	91	86	82	78	74	71	68	55	46	39	34	28	...	...
	82, 82W	2920	243	208	183	172	162	154	146	139	133	127	122	98	81	70	61	49	40	35
	102, 102W	3500	292	250	219	206	194	184	175	167	159	152	146	117	97	84	73	58	48	42
	103, 103W	3900	325	279	244	230	217	205	195	186	177	170	163	130	109	93	82	65	54	46
	104, 104W	4400	367	314	275	259	244	232	220	210	200	191	183	147	122	105	92	73	61	52
	123, 123W	4400	367	314	275	259	244	232	220	210	200	191	183	147	122	105	92	73	61	52
	124, 124W	4600	384	329	288	271	256	242	230	219	209	200	192	153	128	110	96	76	64	55
	125, 125W	5000	417	358	312	294	278	263	250	238	228	218	208	167	139	119	104	83	69	59
	126, 126W	5400	450	386	338	318	300	284	270	257	246	235	225	180	150	129	113	90	75	64
13′-0″	81	1510	116	100	87	82	78	73	70	66	63	61	58	46	39	33	29	...	...	...
	82, 82W	2690	207	177	155	146	138	131	124	118	113	108	103	83	69	59	52	41	34	29
	102, 102W	3230	248	213	187	176	166	157	149	142	136	130	124	99	83	71	62	49	41	35
	103, 103W	3900	300	257	225	212	200	190	180	172	164	157	150	120	100	86	75	60	50	43
	104, 104W	4400	338	290	254	239	225	214	203	193	184	177	169	135	113	97	85	67	56	48
	123, 123W	4400	338	290	254	239	225	214	203	193	184	177	169	135	113	97	85	67	56	48
	124, 124W	4600	354	303	265	250	236	224	212	202	193	185	177	142	118	101	89	71	59	50
	125, 125W	5000	384	330	288	272	256	243	231	220	210	201	192	154	129	110	96	77	64	55
	126, 126W	5400	415	356	312	293	277	262	249	237	226	217	208	166	139	119	104	83	69	59
14′-0″	81	1400	100	86	75	71	67	63	60	57	55	52	50	40	34	29	...	...	...	...
	82, 82W	2500	178	153	134	126	119	113	107	102	98	93	89	71	60	51	45	35	30	...
	102, 102W	3000	214	184	161	152	143	135	129	123	117	112	107	86	72	62	54	43	36	31
	103, 103W	3900	278	239	209	197	186	176	167	159	152	145	139	111	93	80	70	55	46	40
	104, 104W	4400	314	270	236	222	210	199	189	180	172	164	157	126	105	90	79	63	52	45
	123, 123W	4380	313	268	235	221	209	198	188	179	171	163	156	125	105	90	78	62	52	45
	124, 124W	4600	328	282	246	232	219	208	197	188	179	171	164	131	110	94	82	65	55	47
	125, 125W	5000	357	306	268	252	238	226	214	204	195	187	179	143	119	102	90	71	59	51
	126, 126W	5400	386	331	289	272	257	244	232	220	210	201	193	154	129	110	97	77	64	55
	145, 145W	5800	414	355	311	292	276	262	248	237	226	216	207	166	138	119	104	83	69	59
	146, 146W	6200	443	380	332	313	296	280	266	253	242	231	222	177	148	127	111	88	74	63
	147, 147W	6800	486	416	364	343	324	307	292	278	265	254	243	194	162	139	122	97	81	69
15′-0″	81	1310	87	75	66	62	58	55	52	50	48	46	44	35	...	...	...	...	...	...
	82, 82W	2330	155	133	116	110	104	98	93	89	85	81	78	62	52	44	39	31	...	...
	102, 102W	2810	187	161	141	132	125	118	112	107	102	98	94	75	63	54	47	38	31	...
	103, 103W	3640	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	41	35
	104, 104W	4400	293	252	220	207	196	185	176	168	160	153	147	117	98	84	73	59	49	42
	123, 123W	4090	272	234	204	192	182	172	163	156	148	142	136	109	91	78	68	55	46	39
	124, 124W	4600	307	263	230	217	204	194	184	175	167	160	153	123	102	88	77	61	51	44
	125, 125W	5000	333	286	250	235	222	210	200	191	182	174	167	133	111	96	84	67	56	48
	126, 126W	5400	360	308	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	52
	145, 145W	5800	387	332	290	273	258	244	232	221	211	202	193	155	129	111	97	78	64	56
	146, 146W	6200	413	354	310	292	276	261	248	236	225	216	207	165	138	118	104	83	69	59
	147, 147W	6800	454	389	340	320	302	286	272	259	248	237	227	181	151	130	114	91	75	65

In "Steel Joist Construction" for floors, the joists should not be spaced more than 24 inches on centers, as indicated by figures to the left of heavy line in above table.

LOADING TABLE ONE (Continued)

Clear Span	Joist Type	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	
			12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″
16′-0″	81	1230	77	66	58	54	51	49	46	44	42	40	38	31	...	...	...	...	...	...
	82, 82W	2190	137	117	103	97	91	86	82	78	75	71	68	55	46	39	34	...	...	...
	102, 102W	2630	164	141	123	116	110	104	99	94	90	86	82	66	55	47	41	33	...	...
	103, 103W	3420	213	182	160	150	142	134	128	122	116	111	106	85	71	61	53	43	35	30
	104, 104W	4170	260	223	195	184	173	164	156	149	142	136	130	104	87	74	65	52	43	37
	123, 123W	3840	240	206	180	170	160	152	144	137	131	125	120	96	80	69	60	48	40	34
	124, 124W	4600	287	246	216	203	192	182	172	164	157	150	144	115	96	82	72	58	48	41
	125, 125W	5000	312	268	234	221	208	197	187	178	170	163	156	125	104	89	78	63	52	44
	126, 126W	5400	337	289	253	238	225	213	202	193	184	176	169	135	113	97	85	68	57	48
	145, 145W	5800	363	311	272	256	242	229	218	208	198	189	182	145	121	104	91	73	61	52
	146, 146W	6200	387	332	290	274	258	245	233	222	212	202	194	155	129	111	97	78	64	56
	147, 147W	6800	425	364	319	300	283	268	255	243	232	222	213	170	142	122	107	85	71	61
	166, 166W	6400	400	343	300	282	266	253	240	228	218	208	200	160	133	114	100	80	67	57
	167, 167W	7200	450	386	338	318	300	284	270	257	246	235	225	180	150	129	113	90	75	64
17′-0″	102, 102W	2470	145	125	109	103	97	92	87	83	79	76	73	58	48	42	36	29	...	...
	103, 103W	3220	189	162	142	134	126	120	114	108	103	99	95	76	63	54	47	38	32	...
	104, 104W	3920	230	197	173	162	153	145	138	132	126	120	115	92	77	66	58	46	38	33
	123, 123W	3610	212	182	159	150	142	134	127	121	116	111	106	85	71	61	53	43	35	30
	124, 124W	4510	265	227	199	187	177	168	159	152	145	139	133	106	88	76	66	53	44	38
	125, 125W	5000	294	252	220	208	196	186	177	168	161	154	147	118	98	84	74	59	49	42
	126, 126W	5400	318	272	238	224	212	201	191	182	173	166	159	127	106	91	80	64	53	45
	145, 145W	5800	342	292	256	241	228	215	205	195	186	178	171	137	114	98	86	69	57	49
	146, 146W	6200	365	313	273	258	243	230	219	209	199	191	183	146	122	105	92	73	61	52
	147, 147W	6800	400	343	300	282	267	253	240	229	219	209	200	160	134	115	100	80	67	57
	166, 166W	6400	376	323	282	266	251	238	226	215	205	197	188	151	126	108	94	76	63	54
	167, 167W	7200	424	363	318	299	283	268	255	242	231	221	212	170	142	121	106	85	71	60
18′-0″	102, 102W	2330	129	111	97	92	86	82	78	74	71	68	65	52	43	37	32	...	...	...
	103, 103W	3040	169	145	127	119	113	107	101	97	92	88	85	68	56	48	42	34	...	...
	104, 104W	3710	205	177	155	146	138	130	124	118	113	108	103	83	69	59	52	41	34	30
	123, 123W	3410	189	163	142	134	126	120	114	108	103	99	95	76	63	54	47	38	32	27
	124, 124W	4260	236	203	178	167	158	150	142	135	129	124	119	95	79	68	59	47	40	34
	125, 125W	5000	278	238	208	196	185	175	167	159	152	145	139	111	93	79	70	56	46	40
	126, 126W	5400	300	257	225	212	200	190	180	172	164	157	150	120	100	86	75	60	50	43
	145, 145W	5780	321	275	240	227	214	203	193	184	175	168	161	129	107	92	81	65	54	46
	146, 146W	6200	344	295	259	243	230	218	207	197	188	180	172	138	115	99	86	69	58	49
	147, 147W	6800	378	324	284	267	252	239	227	216	206	197	189	151	126	108	95	76	63	54
	166, 166W	6400	356	305	267	251	237	225	213	203	194	186	178	143	119	102	89	72	60	51
	167, 167W	7200	400	343	300	282	267	253	240	229	219	209	200	160	134	115	100	80	67	57
19′-0″	102, 102W	2210	116	100	87	82	78	74	70	66	63	61	58	47	39	33	29	...	...	...
	103, 103W	2880	151	130	114	107	101	96	91	87	83	79	76	61	51	43	38	30	...	...
	104, 104W	3510	184	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	...
	123, 123W	3230	170	146	128	120	113	107	102	97	93	89	85	68	57	49	42	34	28	...
	124, 124W	4040	212	183	160	150	142	135	128	122	116	111	106	85	71	61	53	43	35	...
	125, 125W	4990	263	225	197	186	175	166	158	150	143	137	132	105	88	75	66	53	44	38
	126, 126W	5400	284	244	214	201	190	180	171	162	155	148	142	114	95	81	71	57	47	41
	145, 145W	5480	288	247	217	204	193	183	173	165	158	151	145	115	96	83	72	58	48	41
	146, 146W	6200	326	280	245	230	218	206	196	187	178	170	163	131	109	93	82	65	55	47
	147, 147W	6800	358	307	269	253	239	226	215	205	195	187	179	143	120	102	90	72	60	51
	166, 166W	6400	337	289	253	238	225	213	202	193	184	176	168	135	112	97	84	68	56	49
	167, 167W	7200	379	325	284	268	253	239	227	217	207	198	190	152	127	108	95	76	64	54
20′-0″	102, 102W	2100	105	90	79	74	70	66	63	60	57	55	53	42	35	30	...	...	...	...
	103, 103W	2730	137	117	102	96	91	86	82	78	75	71	68	55	46	39	34	...	...	...
	104, 104W	3340	167	143	125	118	111	105	100	95	91	87	84	67	56	48	42	33	...	...
	123, 123W	3060	153	131	115	108	102	97	92	88	84	80	77	61	51	44	38	31	...	...
	124, 124W	3830	192	164	144	135	128	121	115	109	104	100	96	77	64	55	48	38	32	...
	125, 125W	4740	237	203	178	168	158	150	142	135	129	124	119	95	79	68	59	47	40	34
	126, 126W	5400	270	232	203	191	180	171	162	154	148	141	135	108	90	77	68	54	45	39
	145, 145W	5200	260	223	195	184	174	164	156	149	142	136	130	104	87	74	65	52	43	37
	146, 146W	6200	310	266	232	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44
	147, 147W	6800	340	292	255	240	227	215	204	195	186	178	170	136	113	97	85	68	56	49
	166, 166W	6400	320	275	240	226	213	202	192	183	175	167	160	128	106	92	80	64	53	46
	167, 167W	7200	360	309	270	254	240	228	216	206	197	188	180	144	120	103	90	72	60	52

PATENT OFFICE
JUL 15 1949
DESIGN DIVISION

In "Steel Joist Construction" for floors, the joists should not be spaced more than 24 inches on centers, as indicated by figures to the left of heavy line in above table.

LOADING TABLE ONE (Continued)

Clear Span	Joist Type	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																
			12″	14″	16″	17″	18″	19″	20″	21″	22″	23″	24″	2′-6″	3′-0″	3′-6″	4′-0″	5′-0″	6′-0″	7′-0″
21′-0″	123, 123W	2920	139	119	104	98	93	88	83	79	76	73	70	56	46	40	35	...	...	...
	124, 124W	3650	174	149	130	123	116	110	104	99	95	91	87	70	58	50	43	35	29	...
	125, 125W	4510	215	184	161	152	143	136	129	123	117	112	107	86	72	61	54	43	36	31
	126, 126W	5400	257	220	193	182	172	162	154	147	140	134	129	103	86	73	64	52	43	37
	145, 145W	4950	236	202	177	166	157	149	142	135	129	123	118	94	79	67	59	47	39	34
	146, 146W	6200	295	253	222	209	197	187	177	169	161	154	148	118	99	84	74	59	49	42
	147, 147W	6800	324	277	243	229	216	205	194	185	177	169	162	129	108	93	81	65	54	46
	166, 166W	6400	305	261	229	215	203	193	183	174	166	159	153	122	102	87	77	61	51	44
	167, 167W	7200	343	294	257	242	229	217	206	196	187	179	172	137	115	98	86	69	58	49
22′-0″	123, 123W	2790	127	109	95	90	85	80	76	73	69	66	63	51	42	36	32	...	...	...
	124, 124W	3480	158	136	119	112	105	100	95	91	86	83	79	63	53	45	40	32	...	...
	125, 125W	4300	196	168	147	138	130	124	117	112	107	102	98	78	65	56	49	39	32	...
	126, 126W	5300	241	207	181	170	161	152	145	138	132	126	121	97	80	69	60	48	40	34
	145, 145W	4730	215	185	162	152	144	136	129	123	117	112	108	86	72	61	54	43	36	31
	146, 146W	6200	282	242	212	199	188	178	169	161	154	147	141	111	94	80	70	56	47	40
	147, 147W	6800	309	265	232	218	206	195	185	177	168	161	154	123	103	88	77	62	52	44
	166, 166W	6400	291	250	218	206	194	184	175	166	159	152	146	116	97	83	73	58	48	42
	167, 167W	7200	327	280	245	231	218	206	196	187	178	171	164	131	109	93	82	65	54	47
23′-0″	123, 123W	2670	116	100	87	82	77	73	70	66	63	61	58	46	39	33	29	...	...	...
	124, 124W	3330	145	124	109	102	97	92	87	83	79	76	72	58	48	41	36	29	...	...
	125, 125W	4120	179	154	134	126	119	113	107	102	98	94	90	72	60	51	45	36	30	...
	126, 126W	5060	221	189	165	155	147	139	132	126	120	115	110	88	74	63	55	44	37	31
	145, 145W	4520	197	169	147	139	131	124	118	112	107	103	98	79	66	56	49	39	33	28
	146, 146W	5940	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37
	147, 147W	6800	296	254	222	209	197	187	178	169	161	154	148	118	99	84	74	59	49	42
	166, 166W	6400	278	238	209	197	186	176	167	159	152	145	139	111	93	80	70	56	46	40
	167, 167W	7200	313	268	235	221	209	198	179	171	163	163	157	125	104	90	79	62	53	45
24′-0″	123, 123W	2550	106	91	80	75	71	67	64	61	58	55	53	42	35	30	...	...	...	...
	124, 124W	3190	133	114	100	94	89	84	80	76	73	69	67	53	44	38	33	...	...	...
	125, 125W	3950	164	141	124	116	110	104	99	94	90	86	82	66	55	47	41	33	...	...
	126, 126W	4860	202	174	152	143	135	128	121	116	110	105	101	81	68	58	51	41	34	...
	145, 145W	4340	180	155	135	127	120	114	108	103	99	94	90	72	60	52	45	36	30	...
	146, 146W	5690	237	203	178	168	158	150	142	135	129	124	119	95	79	68	59	47	40	34
	147, 147W	6800	283	242	212	200	189	179	170	162	155	148	142	113	94	81	71	57	47	41
	166, 166W	6400	267	228	200	188	178	168	160	152	145	139	133	107	89	76	67	53	44	38
	167, 167W	7200	300	257	225	212	200	190	180	171	164	157	150	120	100	85	75	60	50	43
25′-0″	145, 145W	4160	166	142	125	117	111	105	100	95	91	87	83	66	56	48	42	33	...	...
	146, 146W	5450	218	187	163	154	145	137	131	125	119	114	109	87	73	62	55	44	36	31
	147, 147W	6560	262	225	197	185	175	166	157	150	143	137	131	105	88	75	66	53	44	38
	166, 166W	6180	247	212	186	175	165	156	148	141	135	129	124	99	82	71	62	49	41	35
	167, 167W	7200	288	247	216	204	192	182	173	165	157	150	144	115	96	82	72	58	48	41
26′-0″	145, 145W	4000	154	132	115	108	102	97	92	88	84	80	77	61	51	44	38	31	...	...
	146, 146W	5250	202	173	152	143	135	128	121	115	110	105	101	81	67	58	51	40	34	...
	147, 147W	6300	243	208	182	171	162	153	146	138	132	127	121	97	81	69	61	49	41	35
	166, 166W	5950	229	196	172	162	153	145	137	131	125	119	115	92	76	65	57	46	38	33
	167, 167W	7200	277	237	208	196	184	175	166	158	151	145	139	111	92	79	69	55	46	40
27′-0″	145, 145W	3850	143	122	107	101	95	90	86	82	78	75	71	57	48	41	36	29	...	...
	146, 146W	5050	187	160	140	132	125	118	112	107	102	98	94	75	62	53	47	37	31	...
	147, 147W	6070	225	193	169	159	150	142	135	129	123	117	112	90	75	64	56	45	37	32
	166, 166W	5730	212	182	159	150	141	134	127	121	116	111	106	85	71	61	53	43	35	30
	167, 167W	6940	257	220	193	181	171	162	154	147	140	134	128	103	86	74	64	51	43	37
28′-0″	145, 145W	3720	133	114	100	94	89	84	80	76	72	69	66	53	44	38	33	...	...	...
	146, 146W	4880	174	149	131	123	116	110	105	100	95	91	87	70	58	50	44	35	29	...
	147, 147W	5850	209	179	157	147	139	132	125	120	114	109	105	84	70	60	52	42	35	30
	166, 166W	5520	197	169	148	139	131	124	118	113	107	103	99	79	66	56	49	39	33	28
	167, 167W	6690	239	205	179	169	159	151	143	137	130	125	119	96	80	68	60	48	40	34
29′-0″	166, 166W	5340	184	158	138	130	123	116	111	105	100	96	92	74	61	53	46	37	31	...
	167, 167W	6460	223	191	167	157	148	141	134	127	122	116	111	89	74	64	56	45	37	32
30′-0″	166, 166W	5150	172	147	129	121	114	109	103	98	94	90	86	69	57	49	43	34	...	...
	167, 167W	6240	208	178	156	147	139	131	125	119	113	108	104	83	69	59	52	42	35	30
31′-0″	166, 166W	4990	161	138	121	114	107	102	97	92	88	84	81	64	54	46	40	32	...	...
	167, 167W	6050	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	...
32′-0″	166, 166W	4840	151	130	113	107	101	96	91	86	82	79	76	60	50	43	38	30	...	...
	167, 167W	5860	183	157	137	129	122	116	110	105	100	96	92	73	61	52	46	37	31	...

In "Steel Joist Construction" for floors, the joists should not be spaced more than 24 inches on centers, as indicated by figures to the left of heavy line in above table.

For Floor and Roof Construction

General — Where "Steel Joist Construction" is specified, it shall be understood to mean that type of construction in which decks or top slabs are supported by Truscon "O-T" Steel Joists spaced not more than 24 in. on centers in floors or 30 in. on centers in roofs.

Joists — Steel joists shall be made of hot rolled steel shapes in the form of a Warren truss having top and bottom chords of single tee-shaped members and a plain round continuous web member. The bottom chord shall be continuous from end to end of joist and bent up at the ends to form the bearings. Steel joists shall be fabricated by means of electric machine welding under pressure making positive connections at all joints.

All steel used shall conform to the American Society for Testing Materials Standard Specifications for Steel for Bridges and Buildings Designation A-7 of latest adoption.

All steel joists shall be spray painted with one shop coat of asphalt base metal protective paint.

NOTE: Years of study have convinced us that a shop coat of black asphalt base paint provides the most practical protective coating for Open-Truss Steel Joists. It must be remembered, however, that if joists are to be exposed in a building, without a protective ceiling attached, this paint will bleed through any second coat of paint that might be applied.

Design — The design and details of all joists shall meet the requirements of the Steel Joist Institute Specifications.

Location and Spacing of Joists — Steel joists shall be spaced not more than 24 inches on centers in floors or 30 inches on centers in roofs, except they may be used to support roof-decks, if not spaced over seven feet on centers and provided the deck is securely attached to the top chords to prevent any lateral deflection.

There shall be one typical joist spaced not more than four inches in the clear from each end wall or bearing wall parallel to the joists. Structural steel tie beams shall not be used to take the place of joists unless architectural or structural plans indicate same are to be used as supporting members.

Where a partition is parallel to joists and the length of the partition exceeds fifty per cent of the joist span, one extra joist shall be provided under the partition or, if necessary, double joists shall be provided under the partition to safely support the additional partition load. Where partitions extend over joists at right angles to same, the additional partition load must be included in computations as part of the dead load.

Anchorage — The ends of steel joists shall extend a distance of at least four inches on concrete or masonry, and at least 2½ inches on structural steel supports. Ends of every third joist supported on concrete or masonry shall be anchored thereto with a ⅜-in. round wall anchor and each end of every joist supported on structural steel shall be anchored thereto by means of a $\frac{3}{16}$-in. round beam anchor or two welds each one inch long.

Steel joists parallel to walls shall have the top and bottom chords anchored to the wall where each row of bridging occurs.

Span — The span of steel joists shall not exceed 24 times the depth of the steel portion of the steel joist.

Bridging — As soon as steel joists have been erected, bridging of an approved Steel Joist Institute type shall be installed between them before the application of construction loads. Bridging rows shall be spaced as follows:

Clear spans 0 to 14 feet — One bridging row
Clear spans 14 to 21 feet — Two bridging rows
Clear spans 21 to 32 feet — Three bridging rows

Ceilings — Where fire resistive construction is required, steel joists shall be protected on the underside with a fire resistive ceiling consisting of plaster on metal lath and shall have a reinforced concrete or gypsum top slab, all as is necessary to provide the required degree of fire resistance, provided that where wood joist construction is permitted steel joists may have a wood nailing strip attached to the top chord and a wood floor may be used, and provided further that where steel joists are used in places where unprotected wood joists are permitted no ceiling protection need be provided.

Where directly attached ceilings occur, ceiling extensions shall be provided at the ends of the steel joists.

Metal ceiling lath for directly attached ceilings shall be ⅜-in. rib lath weighing 3.4 lbs. per square yard for joist spacings up to 30 inches. The rib lath shall be placed under the joists with the ribs up and at right angles to the joists. Ceiling lath shall be attached to the bottoms of the joists by means of lath clips spaced 8 inches apart, placed over the ribs of the lath.

PATENT OFFICE
JUL 15 1949
DESIGN DIVISION

Decks or Top Slabs — A concrete top slab 2 in. thick shall be used for floor and roof construction. The concrete top slab shall be reinforced and supported by ⅜-in. rib lath weighing 4.0 lb. per square yard for joist spacings up to 24 in. and ¾-in. rib lath weighing .60 lbs. per square foot for joist spacings from 24 in. to 30 in. The rib lath shall be placed over the joists with the ribs up and at right angles to the joists. Top lath shall be attached to the top joists by means of lath clips spaced 8 in. apart. The ends of all the sheets shall be lapped at least 2 in. when the laps occur directly over joists and 4 in. when between joists. All laps shall be securely wired together. Where the floor finish is other than wood, the structural slab shall be reinforced against temperature stresses with 6 x 6 10.10 welded wire reinforcement placed near the top of the slab.

Precast concrete top slabs, precast gypsum top slabs, wood decks, or steel decks may be used over steel joists provided they are securely attached to the top chords to prevent any lateral deflection.

NOTE: It is obviously impossible for Truscon to be responsible for differences in level between the tops of adjacent joists, whether due to slight inaccuracies which may occur in manufacturing or to the methods employed in installing the joists. Provision must be made by others, when necessary, to insure a uniform and level bearing for precast slabs placed over steel joists. This may be done by placing shims or some type of plastic material over the top flange of each joist where required.

Wood Floors — Where wood floors are required over concrete top slab, screed clips shall be attached to the top chord of the joists to receive 2-in. by 3-in. (1⅝-in. by 2⅝-in. actual size) wood screeds. The screed clips shall raise the bottom of the wood screeds 1 in. above the joists.

Truscon Open Truss Nailer Joists provide all the advantages of permanent floor construction for homes, apartments and other light occupancy buildings at a cost comparable with ordinary floors.

In them are incorporated the basic features of Truscon "O-T" Open Truss Steel Joists, so extensively used in important buildings throughout the country. Unusual strength and rigidity result from their superior design and construction. Easy installation follows a complete and accurate fabrication in the Truscon plant.

Wide, specially formed members for top and bottom chords impart stiffness to the Nailer Joists and keep them true to line. The continuous steel web member of uniform diameter throughout its entire length, is securely welded to the chords by means of high pressure electric automatic welding.

The end construction — a vital point in steel joist design — is unusually strong and rigid. Bearings for the joists are wide and ample. The underslung design of the supports not only insures stability of the joists during installation but provides additional head room under the supporting girders.

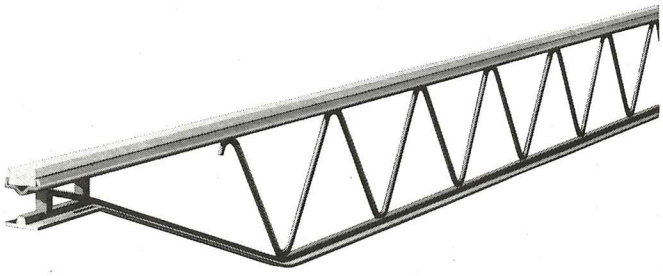
ADVANTAGES OF NAILER JOISTS

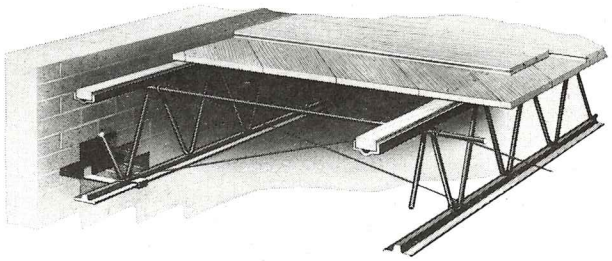
Truscon "O-T" Open Truss Nailer Joists reach the job ready for placing without cutting or fitting. The wood flooring is nailed directly to the wood nailing strips which are securely attached to the top chords of the joists.

The light weight of nailer joist construction lessens the time and labor required for erection and also saves materials in the supporting framework and foundations. Every detail of joists and attachments has been perfected by practical experience to simplify installation and assure dependable results.

With a metal lath plastered ceiling attached to the lower chord of the joists, the construction provides fire-safety to a substantial degree, preventing the spread of fire from below.

With Truscon "O-T" Open Truss Nailer Joists available it is no longer necessary, from either a practical or economical standpoint, to use wood joist construction in any building.





"UNDERCHORD" ROD BRIDGING

Truscon "Underchord" Rod Bridging, as illustrated, is very effective and is easily installed. It is practical and will permit of a slight variation in joist spacing as is frequently necessary in order that joists can be spaced to avoid interference with other structural members, vent ducts, soil pipes, etc. This bridging does not interfere in any way with the top surface of the joist and permits the sub-floor to be laid in perfect contact with the nailing strip of the joist.

FRAMING AROUND SMALL OPENINGS

When it is necessary to frame around small openings such as required for dumb waiters, this framing can be very readily done in "O-T" Open Truss Nailer Joist construction by the introduction of a header angle to support the tail joist. The wood nailer strip, in these cases, must be notched in the field. We recommend that large openings be framed entirely with structural steel.

SPECIFICATIONS

General — Where Nailer Joist floor construction is specified, it is understood to mean Truscon "O-T" Open Truss Nailer Joists of the size and spacing as shown on the drawings, together with a wooden floor over the joists and, unless otherwise specified, a metal lath and plaster ceiling directly beneath the joists.

The Nailer Joists shall be made of rolled steel shapes fabricated by high pressure electric automatic welding. The web member shall be a continuous plain round bar of constant diameter bent cold. The top chord shall be straight and the bottom chord bent up to form the bearing. The design and details of all members shall meet the requirements of the Steel Joist Institute Specifications. The wood nailer strip shall not be considered in determining the carrying capacity of the joist.

Nailer Strip — The wood nailer strip shall be first quality yellow pine or fir and shall be held securely to the top chord by pressure embedment of the flanges of the top chord into its sides or by the use of lag screws.

Painting — All Nailer Joists shall be spray or dip painted with one shop coat of good black asphalt metal protective paint.

Bearing and Anchorage — The ends of joists shall extend a distance of at least four (4") in. on masonry or reinforced concrete supports and at least two and one-half (2½") in. on steel supports. Every third joist bearing on masonry walls shall be anchored. Joists parallel to walls shall have the bottom chords anchored at the line of the rows of bridging. Every joist bearing on structural steel beams shall be fastened by an anchor (or welding).

Bridging — As soon as joists have been erected and before the application of construction loads, joists shall be bridged with a tension type of "underchord" rod bridging consisting of a ½-in. rod placed underneath the top chords of the joists and transversely to them and held in place by means of spring clips engaging the rod and the web members at a panel point. This transverse rod shall be supplemented by $\frac{3}{16}$-in. diagonally placed rods securely wound to both the transversely placed rod and the web members where they meet the bottom chords of joists. For residential construction diagonal steel type bridging, welded to the top and bot tom chord members, of the joists, is recommended. For spans up to 14 ft. 0 in. one row of bridging is required; two rows between 14 ft. 0 in. and 21 ft. 0 in.; and three rows over 21 ft. 0 in.

Ceilings — Where directly attached ceiling occurs, Ceiling Extensions shall be provided.

Note: The spacing of the Nailer Joists must not be more than the safe span of the flooring over the joists.

A MEMBER OF THE STEEL JOIST INSTITUTE

Truscon "Clerespan" Joists when employed in floor construction can be used advantageously in buildings for all types of occupancy regardless of their location. In many types of buildings their use will automatically eliminate all columns from the structure with the exception of those in the outer walls. Greater floor areas are thus provided without obstructing columns than has ever heretofore been accomplished. When used in roof construction "Clerespan" Joists meet all requirements of every type of building.

"Clerespan" Joists made of hot rolled structural steel shapes, are designed in accordance with standard engineering practice. Top chords are designed for bending between panel point as well as direct compression.

"Clerespan" Joists all have a camber built in them. They are fabricated by welding in a modern shop noted for its welding equipment and developments in automatic welding.

"Clerespan" Joists possess unusual lateral stiffness. This is due to the high radius of gyration about the vertical axis.

"Clerespan" accessories, such as anchors, lath clips, screed clips, bearing plates, etc., are similar to those used with open truss joists. Diagonal bracing or bridging is provided by hot-rolled angles. Lines of bracing are about 10 ft. apart.

Notes Regarding Table

The weight of dead loads must in all cases be deducted to determine the live load carrying capacities which must be reduced for concentrated loads.

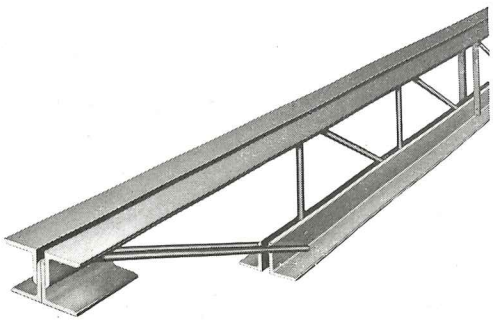
When holes are required in top or bottom chords the carrying capacities must be reduced in proportion to reduction of chord areas.

Figures printed in columns to right of heavy vertical line are for roof construction only.

Loads below horizontal zig-zag line are limited by end reaction.

Illustrations below show "Underslung" Clerespan with top chord parallel to bottom. However, they can also be made with square ends. The top chord can be parallel to bottom chord or pitched in one or two directions.

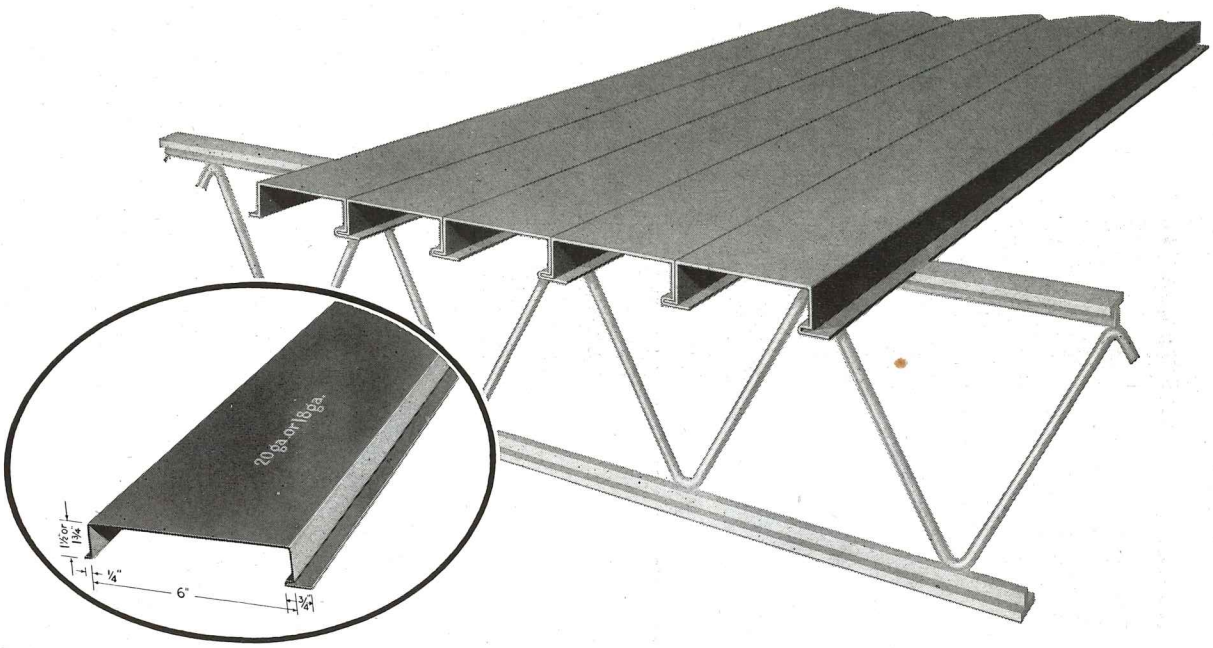
The carrying capacities of "Clerespan" with top chords pitched, is determined by the nominal depth of the "Clerespan" Joists at the center of the span.



TOTAL SAFE UNIFORM LOAD TABLE

The following table gives the total safe uniformly-distributed load-carrying capacities of Truscon "Clerespan" Joists in pounds per lineal foot of span.

	Joist Types	Weight Lbs./Ft.	Max. End Reaction	Clear Opening or Net Span											
				25′-0″	26′-0″	27′-0″	28′-0″	29′-0″	30′-0″	31′-0″	32′-0″	33′-0″	34′-0″	35′-0″	36′-0″
18″ Depths	181	11	3,775	302	285	269	252	236	221	208	196	184	174	165	156
	182	12	4,213	337	320	298	277	259	242	226	212	200	188	178	168
	183	13	4,700	376	356	337	319	302	283	265	248	234	220	208	196
	184	15	5,625	450	422	392	364	340	317	297	278	262	247	233	220
	185	17	6,113	489	462	437	414	392	366	343	322	303	285	269	254
	186	19	6,966	557	536	516	480	448	418	392	368	346	326	307	291
	187	21	7,279	582	560	539	520	502	470	442	415	391	369	349	330
	188	23	7,635	611	587	566	545	527	509	478	449	423	399	377	357
	189	25	8,144	650	626	603	582	561	542	525	509	479	452	426	404
	1810	27	8,531	682	656	632	609	588	568	550	533	517	487	460	434
	1811	29	8,768	701	674	649	626	605	584	566	548	531	516	501	473
	1812	32	9,288	743	714	688	663	640	619	598	580	563	546	531	516
				29′-0″	30′-0″	31′-0″	32′-0″	33′-0″	34′-0″	35′-0″	36′-0″	37′-0″	38′-0″	39′-0″	40′-0″
20″ Depths	201	11	3,625	250	238	226	215	203	192	182	172	163	155	148	141
	202	12	4,031	278	267	253	237	223	210	198	187	177	168	160	152
	203	13	4,510	311	296	282	269	257	246	232	219	208	197	187	178
	204	15	5,409	373	354	332	312	293	276	261	246	233	221	210	199
	205	17	5,858	404	385	367	350	334	319	301	284	269	255	242	230
	206	19	7,091	489	464	439	412	387	365	344	325	308	292	277	264
	207	21	7,560	521	504	479	456	433	409	387	366	347	330	314	299
	208	23	7,984	550	532	515	499	471	444	420	398	377	358	340	324
	209	25	8,517	587	568	549	532	516	501	474	449	426	404	385	366
	2010	27	8,995	619	598	580	562	544	528	514	487	462	438	416	395
	2011	29	9,306	642	620	600	582	564	547	532	517	503	477	453	431
	2012	32	9,880	681	658	637	617	598	581	564	549	534	520	493	469
	2013	34	10,023	691	668	647	626	607	590	573	557	542	528	514	489
	2014	36	10,660	735	710	688	665	646	627	608	592	576	561	547	533
				33′-0″	34′-0″	35′-0″	36′-0″	37′-0″	38′-0″	39′-0″	40′-0″	41′-0″	42′-0″	43′-0″	44′-0″
22″ Depths	221	11	3,498	212	203	194	186	178	169	161	154	147	140	134	128
	222	12	3,911	237	227	218	207	196	186	176	168	160	152	145	139
	223	13	4,340	263	252	242	232	223	214	206	196	187	178	170	162
	224	15	5,214	316	302	288	273	258	245	233	221	210	200	191	183
	225	17	5,643	342	328	315	302	290	279	268	255	242	231	220	210
	226	19	6,848	415	396	379	360	341	323	307	292	278	265	252	241
	227	21	7,442	451	431	412	394	378	361	344	327	312	298	285	272
	228	23	8,481	514	486	460	436	414	393	374	356	340	324	310	296
	229	25	8,855	537	521	506	484	464	443	421	401	383	365	349	334
	2210	27	9,380	568	552	536	521	507	481	458	436	416	397	379	362
	2211	29	9,750	590	574	557	542	527	513	500	476	454	433	413	395
	2212	32	10,360	628	609	592	575	560	545	531	518	494	471	450	429
	2213	34	10,558	640	621	603	587	571	556	541	528	515	491	468	447
	2214	36	10,987	666	646	625	610	594	578	563	549	536	523	511	488
				37′-0″	38′-0″	39′-0″	40′-0″	41′-0″	42′-0″	43′-0″	44′-0″	45′-0″	46′-0″	47′-0″	48′-0″
24″ Depths	242	12	3,774	204	197	190	183	175	167	159	152	145	139	133	128
	243	13	4,200	227	219	211	203	196	189	183	176	170	162	156	149
	244	15	5,069	274	263	253	242	233	220	209	200	191	183	176	168
	245	17	5,458	295	284	274	264	255	246	238	229	220	211	202	194
	246	19	6,642	359	345	331	318	305	290	277	264	253	242	232	222
	247	21	7,215	390	374	360	346	333	321	309	296	283	271	260	250
	248	23	8,288	448	427	406	387	369	353	337	322	309	296	284	272
	249	25	8,862	479	460	442	426	409	394	379	363	347	333	320	307
	2410	27	9,937	537	523	498	475	453	432	413	395	378	363	348	334
	2411	29	10,360	560	545	531	518	494	471	450	431	413	395	379	364
	2412	32	10,773	582	567	552	539	526	513	490	469	449	430	413	396
	2413	34	11,073	598	583	568	554	540	527	515	492	470	450	431	413
	2414	36	11,543	624	608	592	577	563	550	537	525	513	491	470	451
				41′-0″	42′-0″	43′-0″	44′-0″	45′-0″	46′-0″	47′-0″	48′-0″	49′-0″	50′-0″	51′-0″	52′-0″
26″ Depths	264	15	4,920	240	232	223	216	208	201	193	185	178	171	165	159
	265	17	5,310	259	250	242	234	227	220	213	206	199	191	184	178
	266	19	6,478	316	304	294	283	273	263	252	242	232	223	214	206
	267	21	7,011	342	330	319	308	297	287	278	269	259	249	240	231
	268	23	8,057	393	380	364	348	333	319	307	294	283	272	262	252
	269	25	8,631	421	406	392	378	365	353	342	330	318	306	295	284
	2610	27	9,984	487	466	445	426	408	392	376	361	347	334	321	309
	2611	29	10,563	514	503	484	465	445	427	410	393	378	364	350	337
	2612	32	11,000	537	524	512	500	483	465	446	428	411	396	381	367
	2613	34	11,543	563	550	537	525	513	491	470	451	432	415	399	384
	2614	36	12,032	587	573	560	547	535	523	512	491	471	452	435	418
				45′-0″	46′-0″	47′-0″	48′-0″	49′-0	50′-0″	51′-0″	52′-0″	53′-0″	54′-0″	55′-0″	56′-0″
28″ Depths	284	15	4,815	214	207	200	194	187	182	175	169	162	156	151	145
	285	17	5,153	229	223	216	210	204	198	190	184	177	171	165	160
	286	19	6,323	281	272	263	254	247	239	232	223	214	206	199	192
	287	21	6,840	304	294	285	276	268	259	252	244	237	230	222	215
	288	23	7,875	350	338	326	315	303	292	281	271	261	252	243	235
	289	25	8,415	374	362	351	340	329	319	310	300	291	283	273	264
	2810	27	9,765	434	419	403	387	372	358	345	332	320	309	298	288
	2811	29	10,463	465	449	434	420	405	390	376	362	349	337	325	314
	2812	32	11,183	497	481	465	450	436	422	409	394	379	366	353	341
	2813	34	12,190	542	530	509	488	468	449	432	416	400	385	371	358
	2814	36	12,495	555	543	532	521	510	489	470	452	436	420	404	390
				49′-0″	50′-0″	51′-0″	52′-0″	53′-0″	54′-0″	55′-0″	56′-0″	57′-0″	58′-0″	59′-0″	60′-0″
30″ Depths	304	15	4,704	192	187	181	176	171	166	161	156	151	145	140	136
	305	17	5,023	205	200	194	188	182	175	170	164	159	154	149	144
	306	19	6,174	252	245	237	231	224	218	211	206	199	192	186	180
	307	21	6,689	273	265	257	250	243	236	230	223	217	211	205	199
	308	23	7,718	315	305	296	287	278	269	259	250	242	234	227	219
	309	25	8,232	336	326	316	307	299	291	232	275	267	259	251	243
	3010	27	9,555	390	378	367	354	341	329	318	307	297	287	278	269
	3011	29	10,241	418	405	393	381	370	359	347	335	324	313	303	293
	3012	32	10,952	447	433	420	408	396	385	374	363	352	340	329	319
	3013	34	12,103	494	479	464	447	430	415	400	386	372	359	347	336
	3014	36	12,825	523	513	498	483	468	451	435	420	405	391	378	366
				53′-0″	54′-0″	55′-0″	56′-0″	57′-0″	58′-0″	59′-0″	60′-0″	61′-0″	62′-0″	63′-0″	64′-0″
32″ Depths	328	23	7,553	285	277	270	263	255	249	241	233	226	219	212	206
	329	25	8,056	304	296	288	280	273	266	259	252	244	236	229	223
	3210	27	9.381	354	344	334	325	315	305	295	286	277	268	260	253
	3211	29	10,044	379	368	358	348	339	330	321	311	302	293	284	275
	3212	32	10,733	405	394	383	373	363	353	344	335	326	317	308	299
	3213	34	11,819	446	433	422	410	398	385	372	360	348	337	326	316
	3214	36	12,720	480	467	454	442	430	418	404	391	379	366	355	344



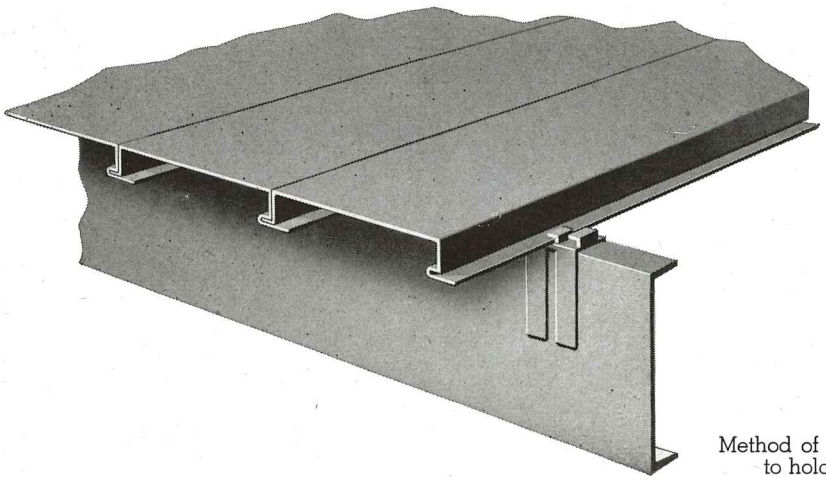
FERROBORD STEELDECK

Truscon Ferrobord Steeldeck was developed to offer to the public, through architects and builders, a lightweight steel roof decking, the performance of which could be calculated by means of accepted engineering principles. The result is a parallel system of strong structural interlocking members, predictable in performance, which presents a smooth surface over which can be applied built-up roofing, with or without insulation. Ferrobord is manufactured from both 20-gage and 18-gage copper-bearing strip steel, having a yield strength of not less than 33,000 lbs. per square inch. Each unit is 6 in. wide and has a depth of either 1½ or 1¾ in.

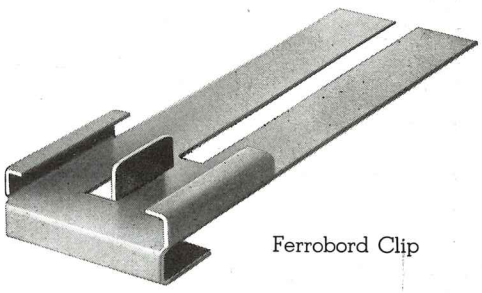
The members are so designed and formed that each unit firmly interlocks with the adjoining unit along the full length, thereby achieving the maximum in lateral distribution of concentrated loadings. The members are fabricated in units long enough to span over three or more purlin spacings (Maximum length recommended for economical fabrication 32 ft. 0 in.). The deck may therefore be considered as a continuous beam instead of a simply supported beam, with the consequent increase of 25% in carrying capacity. End joints in members are so staggered that no two adjoining units are spliced or butted over the same purlin. The fabricated sheets receive a shop coat of rust inhibitive gray paint.

In erecting the deck, as each individual unit is laid in place, it can be either clipped or welded to the supporting framework. The narrow width of the deck unit permits each piece to be fastened to its support at each rib. The work is done from above precluding the necessity for the use of scaffolding or movable stages during erection.

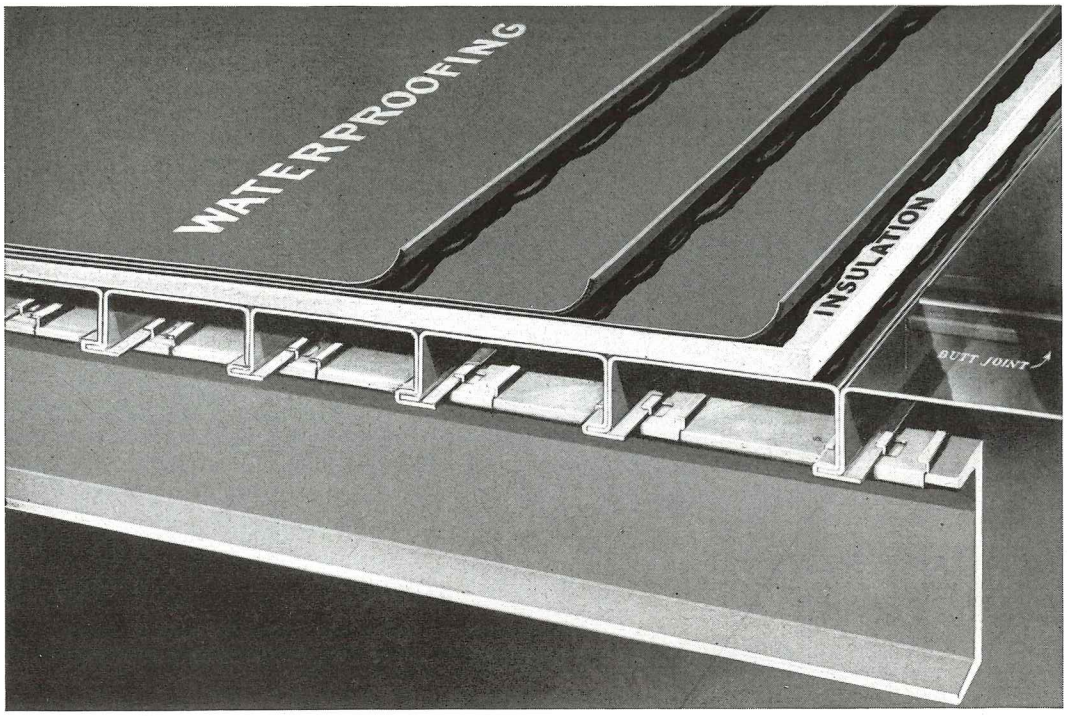
Ferrobord is adaptable to flat, or pitched, or curved roofs. The 1½-in. deck may be shop curved to a minimum radius of 60 ft. 0 in. and the 1¾-in. deck to a minimum radius of 75 ft. 0 in.



Method of applying Ferrobord Clip to hold roof sheet to purlin



Ferrobord Clip



For the reduction of heat transmission, and the elimination of condensation, Truscon Ferrobord Steeldeck may be insulated to any required degree of efficiency. The top surface of Ferrobord steeldeck when laid, presents a smooth, unbroken face, without openings, that constitutes an ideal surface for the application of insulation and built-up waterproofing.

The Truscon Steel Company maintains branch offices in many of the large cities, and the services of Truscon engineers are available for assistance in the laying out of the steeldeck.

The Truscon Steel Company will be glad to cooperate with the local roofing company in the selection of the proper type of insulation and built-up roofing.

FERROBORD SAFE LOADING TABLES

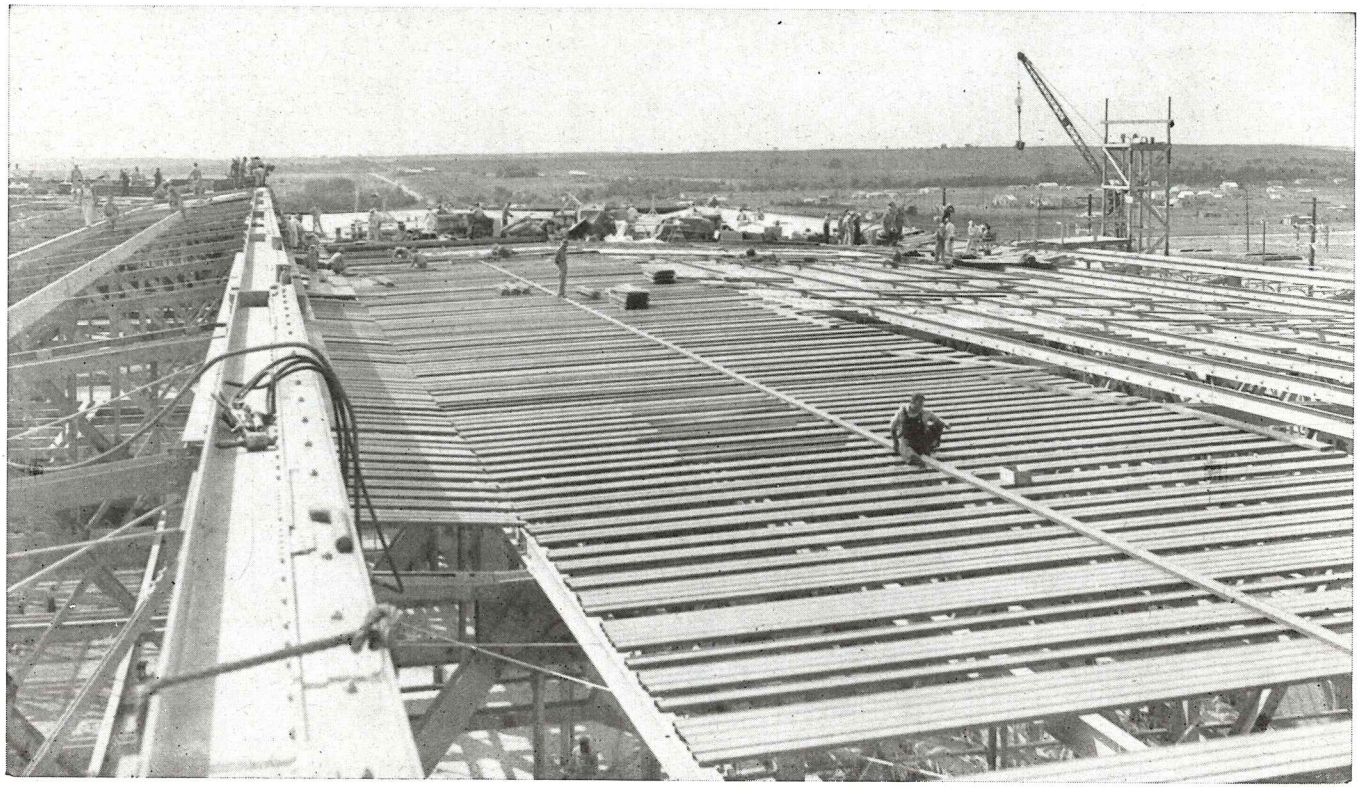
		Properties Per Foot of Width			SPAN												
Gage	Depth	Weight in Lbs.	Section Modulus	Mom. of Inertia	4′ 0″	4′ 6″	5′ 0″	5′ 6″	6′ 0″	6′ 6″	7′ 0″	7′ 6″	8′ 0″	8′ 6″	9′ 0″	9′ 6″	10′ 0″
20	1½″	2.54	.194	.192	182	144	116	96	81	69	59		45	39	..	..	..
18	1½″	3.36	.258	.266	242	191	155	128	108	92	79	69	60	53	46	40	..
20	1¾″	2.66	.242	.276	227	179	145	120	101	86	74	65	57	50	45	40	35
18	1¾″	3.52	.323	.384	303	239	194	160	135	115	99	86	76	67	60	54	48

Calculations for loads indicated in the above table are based on a bending moment of $\frac{WL}{10}$, with the assumption that the Ferrobord units will span over three or more purlin spacings, welded to supports. The resulting unit stresses do not exceed 18,000 lbs. per square inch.

Loads given are in pounds per square foot, and include both dead and live loads.

In all of the above spans the deck will support a concentrated load of 225 lbs. distributed laterally over a width of 18 inches. Deflection limit $\frac{1}{240}$ span. Loads to the right of the zig-zag line have been reduced to keep within this limit.

Note: Steel deck, insulation and built-up roofing will weigh approximately 5.0 lbs. per sq. ft. for 20 ga. and 6.0 lbs. per sq. ft. for 18 ga.

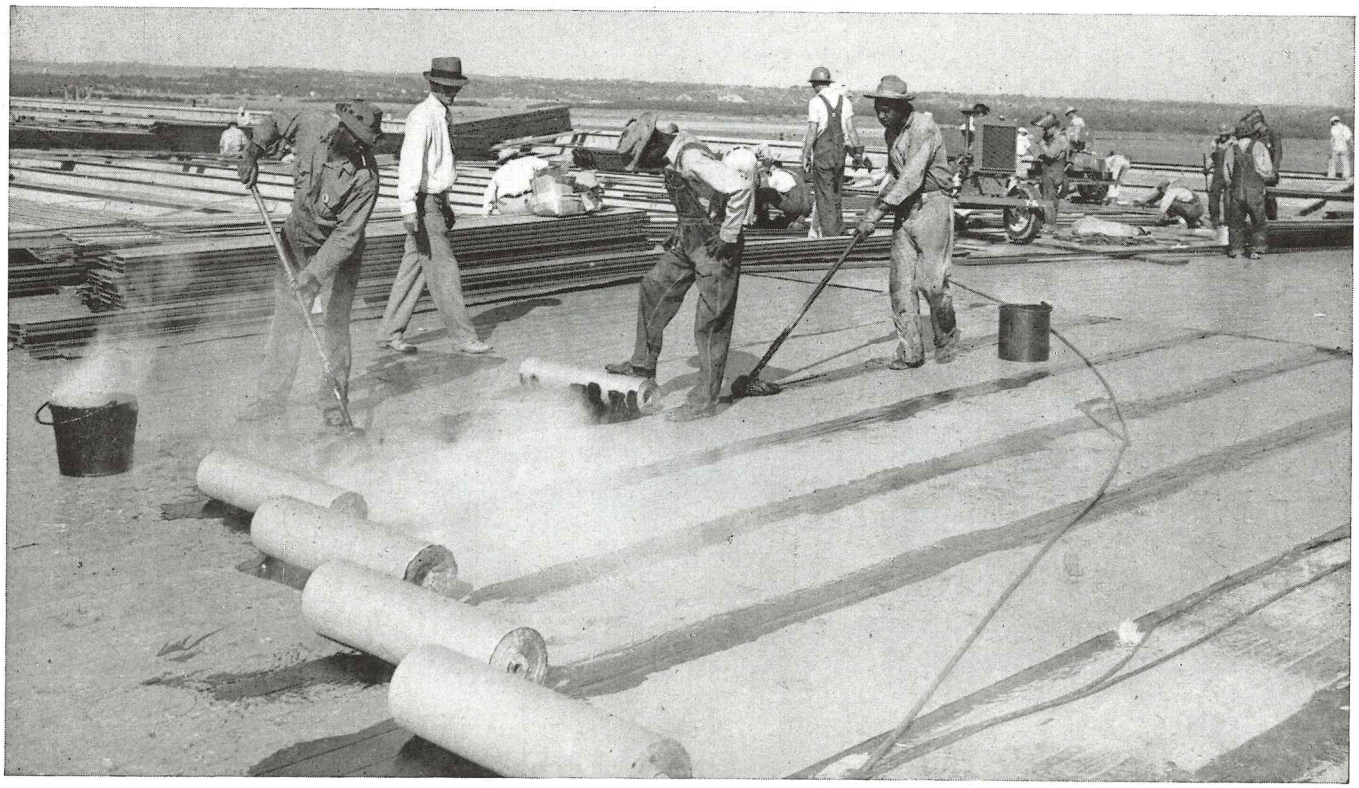


AIRCRAFT ASSEMBLY PLANT

A streamlined giant is this completely air-conditioned assembly plant. Nearly a mile long and a city block wide, this enormous building was completed in record time with the help of Truscon Ferroglas for walls and ceiling . . . an outstanding product of Truscon's well-known engineering skill and production facilities.

Fundamentally, Ferroglas panels are built-up laminations of Truscon formed steel sheets and Fiberglas insulation. In the essential qualities of insulation, sound absorption, fire resistance, interior light reflection and diffusion, Truscon Ferroglas panel construction excels any previous specification requirements!

Over 1,600,000 square feet of Truscon Ferrobord Steeldeck Roof were used in this unusually large building. Photograph at the bottom of the page illustrates method of applying built-up roofing.



RESISTS FIRES—PREVENTS CRACKS LASTS INDEFINITELY

Metal Lath is the plaster base for walls and ceilings that meets all the requirements of modern construction. It is easy to erect and work over, yet is capable of being formed into unusual shapes for arches, coves, plaster fireplaces, and curved walls and stairways. Metal Lath actually grips the plaster, locking it around the strands of steel, which form the openings, holding the plaster in place, even though subjected to violent shocks and vibration.

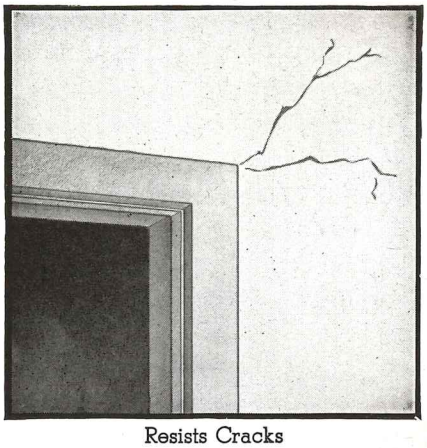
It is further significant that building codes in all principal cities specify Metal Lath in such structures as schools, hospitals, theatres, and buildings in congested areas, for the fire-resistive qualities it affords. Underwriters Laboratories tests show that wood construction with a protective finish of Metal Lath and plaster is safeguarded against the attack of destructive fires for well upwards of one hour. Plaster calcines, when subjected to sufficient heat, lose their hardness and become powdery, but even though calcined, if held in place by Metal Lath, it offers an effective barrier against fire.

This Underwriter's Rating established the extraordinary fire-resistance of Metal Lath as compared with other interior construction and emphasizes the safety of lumber when protected by Metal Lath and Plaster.

Subdivision of floor areas by means of partitions so as to secure the greatest number of occupancy factors at minimum cost is accomplished by the use of 2-in. solid Metal Lath and Plaster Partitions. The adaptability of Solid Metal Lath Partitions results in numerous economies in construction costs. Their space-saving, weight, and upkeep economy, coupled with high efficiencies in fire-resistance, sound-resistance, crack and impact resistance, sanitation, low cost, and their general all-around superiority over other construction commonly used, give Solid Metal Lath and Plaster Partitions preference. They are better suited than other type partitions for non-bearing subdividing partitions within apartments and for corridors. They are advantageously used for the inclosure of stairways, elevators, shafts, dumbwaiters, penthouses, fan and motor rooms, and for ventilating shafts.

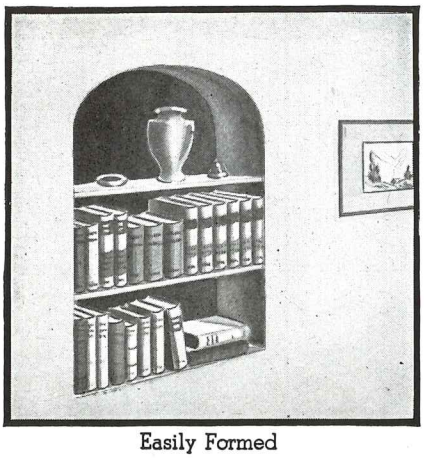
All Truscon Metal Lath products are manufactured in accordance with U. S. Dept. of Commerce, Simplified Practice Recommendation R344.

Resists Fire

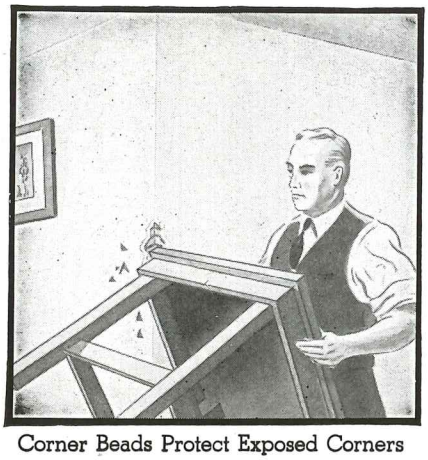


Resists Cracks

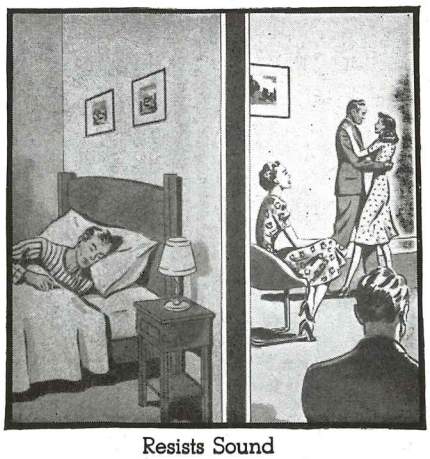
Permanent



Easily Formed



Corner Beads Protect Exposed Corners



Resists Sound

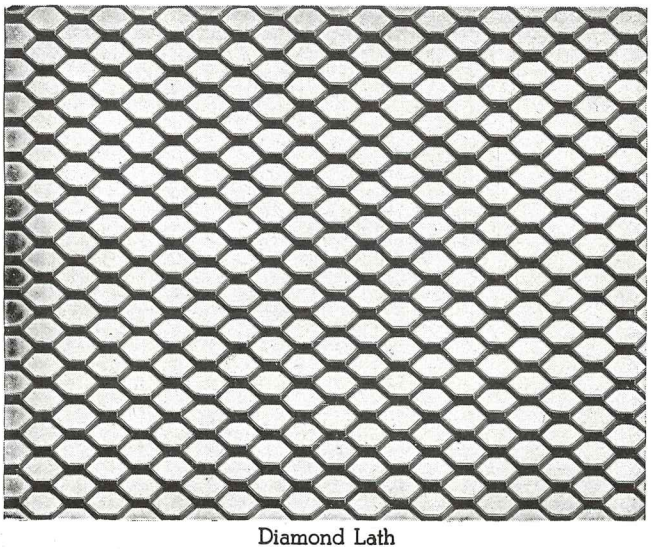
TRUSCON Diamond Metal Lath

Truscon Diamond Lath is a flat metal lath, uniformly expanded throughout the entire sheet. Its use is almost universal, for it is adaptable for practically all classes of work — as a base for walls, partitions, ceilings, as a reinforcement for stucco, as a protection for steel beams, and columns, and for protecting hazardous points in wood frame construction — such as ceilings under inhabited floors, especially over heating plants and coal bins, around flues, and back of kitchen ranges, stair wells, and under stairs.

Diamond Lath has more openings in a given area, with a proportionate increase in the area of steel. The increased proportion of steel gives the sheets great rigidity. They are easily handled and quickly erected, and less time is taken in applying the scratch coat and truing up the wall than with ordinary diamond lath. The small openings prevent excess penetration of plaster, thus minimizing droppings. The larger number of openings permits the formation of more keys to give efficient bondings of the plaster to the lath.

Truscon Diamond Lath is made in sheets 27 x 96 in., the largest practical size. It is made by the center expanding process, and after expansion each sheet is passed between heavy rolls to make it smooth and flat and remove any distortion. The ends of each sheet are trimmed square and true.

Weights per Sq. Yard		Sizes of Sheets, Inches	Area of Sheets, Sq. Yds.	Sheets per Bundle	Sq. Yds. per Bundle	Weight per Bundle
Galv.	Copper Alloy Painted					
	2.5	27 x 96	2	10	20	50
3.4	3.4	27 x 96	2	10	20	68



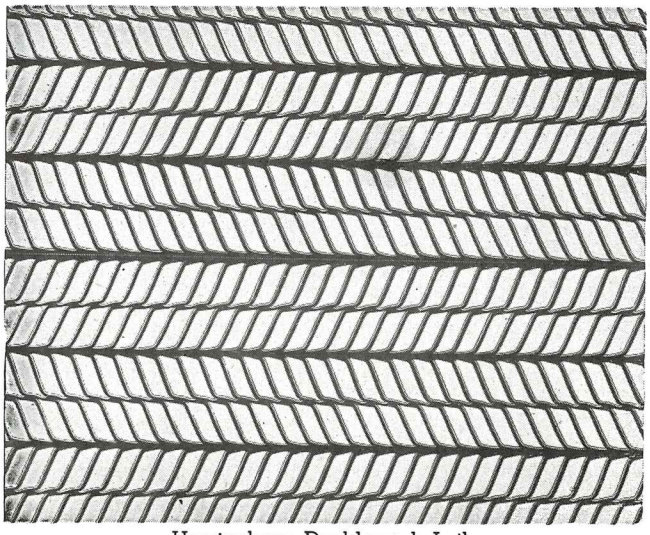
Diamond Lath

TRUSCON *Herringbone Doublemesh Metal Lath

Truscon Herringbone Doublemesh is a flat rib lath designed for interior, one side plastering. It embodies all the advantages of Metal Lath in general, and in addition, because of its scientific design, offers construction features which make it the most preferred lath for its particular purpose on the market.

The large size of the sheets (27 x 96 in.) means less labor is required to lath a room. At the same time, the interlocking edges afford a perfect joint without wastage of material at the laps. A study of the Herringbone Doublemesh pattern will show why less plaster is required to do a good job. Herringbone Doublemesh has a small mesh between the ribs, approximately 1200 to the square foot. The longitudinal ribs are at an angle to the plane of the sheet, and serve as supporting and reinforcing members for the lath and plaster. They serve as baffle plates to deflect the excess mortar back against the trowel, and as shelves upon which the mortar rests and is held in place while setting. Because of the rigidity of the sheets no stretching is required, and studs may be placed farther apart without the lath sagging or bending when plaster is applied; hence no leveling off to do when the brown coat of plaster is applied.

Weights per Sq. Yard	Size of Sheets, Inches	Area of Sheets, Sq. Yds.	Sheets per Bundle	Sq. Yds. per Bundle	Weight per Bundle
Copper Alloy Painted					
2.75	27 x 96	2	10	20	55.5
3.4	27 x 96	2	10	20	68



Herringbone Doublemesh Lath

*Reg. U. S. Pat Off.

TRUSCON ⅜-in. Ribplex Lath

The extreme rigidity of Ribplex Lath due to the ⅜-in. Ribs, on 4-in. centers, permits a wider spacing of studs and ceiling supports. The ribs take the place of furring strips — a saving of material and time of erection, and nest together at sides and ends to make a rigid splice and a uniform plastering surface.

⅜-in. Ribplex Lath is furnished in copper alloy steel standard sheets 24 in. wide by 96 in. long. Packed 9 sheets — 16 square yards per bundle. The flattened strands in ⅜-in. Ribplex decrease the size of the mesh openings and give a perfect key while requiring a minimum amount of plaster.

PATENT OFFICE JUL 19 1949 DESIGN DIVISION

TRUSCON ⅜" RIBPLEX LATH

Weights per Sq. Yd. Copper Alloy Painted	Sizes of Sheets Inches	Area of Sheets Sq. Yds.	Sheets per Bundle	Sq. Yds. per Bundle	Weight per Bundle Pounds
3.4	24 x 96	1-7/9	9	16	54.5
4.0	24 x 96	1-7/9	9	16	64.0

Truscon ⅜" Ribplex Lath is widely used as combination form, centering and reinforcing for concrete slabs in steel construction.

TRUSCON *Self-Sentering Lath

Truscon Self-Sentering is a ribbed expanded metal lath with the ribs 11/16 in. high and spaced 3⅝ in. on center. The ribs are connected by a diamond mesh — all cut and drawn from one sheet of steel. A beveled edge where the mesh and ribs join adds considerably to the strength of the sheet. Self-Sentering serves as both form and reinforcement for concrete floors and roofs, sidewalls and partitions.

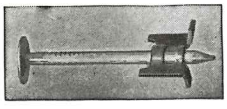
Self-Sentering sheets are 29 in. wide, the widest of any material made for a similar purpose. The sheets can be curved at the factory to any desired radius, 12 in. or larger, with the ribs always on the outside of the arc, making it adaptable for arched floor or roof slabs, tanks or culverts.

Bundled 10 sheets per bundle. Furnished in copper alloy steel. Furnished in 8-, 10- and 12-ft. lengths.

TRUSCON Stucco Mesh

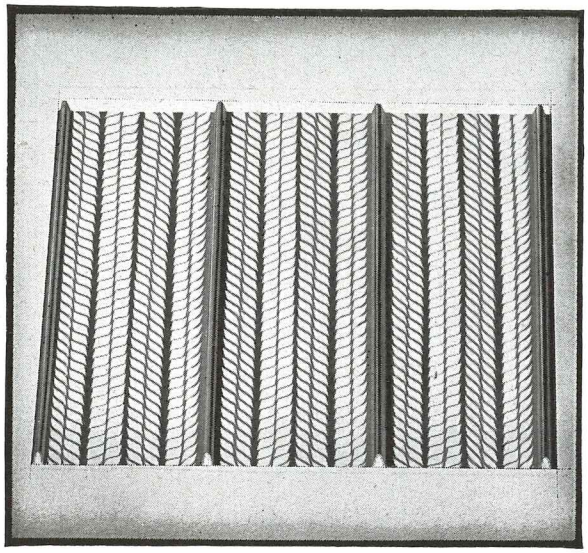
Many builders prefer a wide mesh, heavy strand expanded metal for stucco construction. Truscon Stucco Steel is an excellent material for this type of work. The diamond shaped mesh 1½ x 3 in. has proved to be most satisfactory, and the heavy cross section of the strands adds great strength. Stucco Steel is made in 8-ft. 0-in. lengths only, and in either 2-ft. 0-in. or 4-ft. 0-in. widths. A special type of nail is used for attaching Stucco Steel to sheathing. This nail acts as a furring device, and securely locks the Stucco Steel ⅜ in. from the sheathing.

Wt. in Lbs. per Sq. Yd. Copper Alloy Steel	Size of Sheet Inches	Sheets per Bdl.	Sq. Yds. per Bdl.	Wt. in Lbs. per Bdl.
1.8	24 x 96	9	16	28.8
1.8	48 x 96	9	32	57.6
3.6	24 x 96	5	8-8/9	32.0
3.6	48 x 96	5	17-7/9	64.0

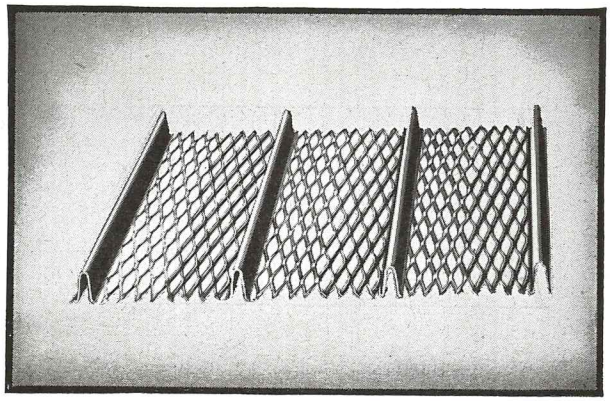


Furring Nails
6 lbs. per 1000 pcs.
Packed 1000 pcs. per carton

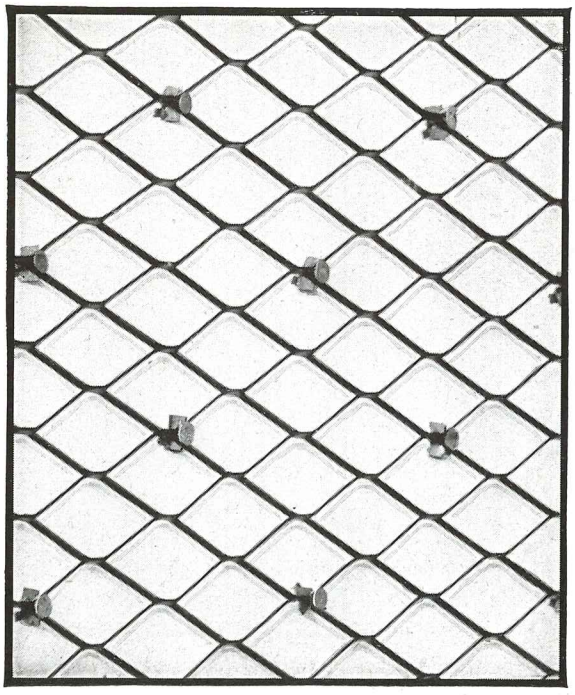
*Reg. U. S. Pat Off.



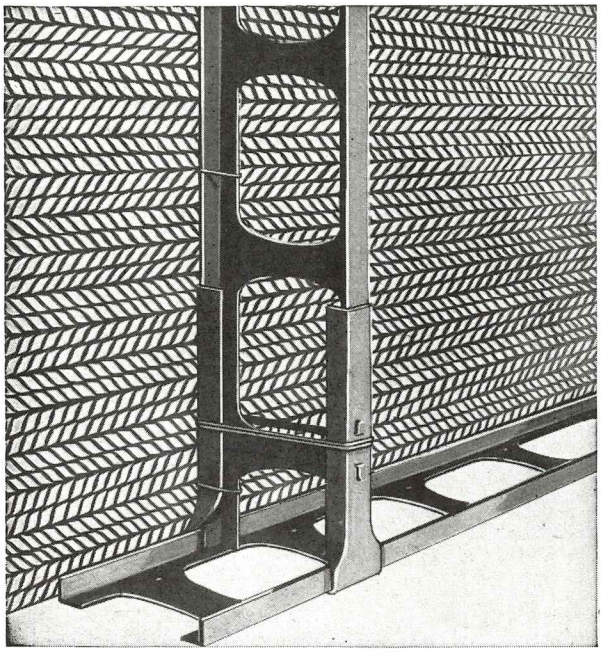
⅜-in. Ribplex Lath



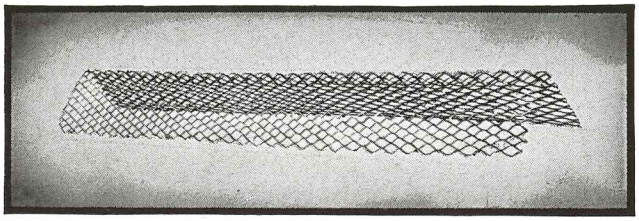
Self-Sentering Lath



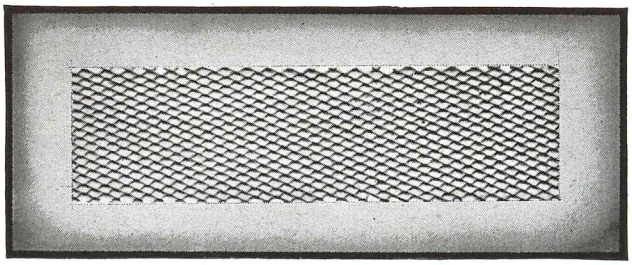
Stucco Mesh



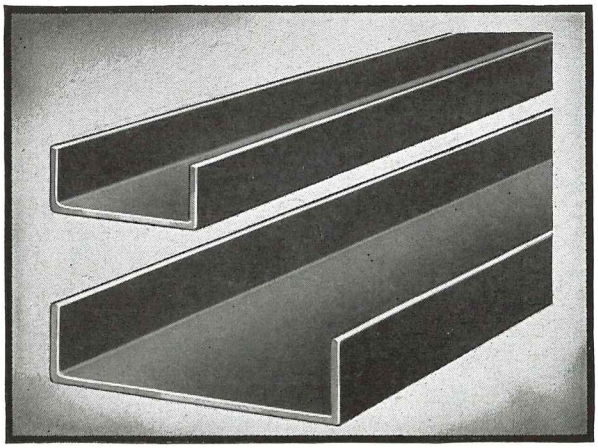
Hollow Partition Studs



Cornerite



Strip-Ite



Cold Rolled Channels

TRUSCON Hollow Partition Studs

Truscon Hollow Partition Studs are fire-safe, provide excellent heat insulation, sound resistance and are rodent and termite proof. They will not swell nor warp and will resist impact, vibration or plaster cracking much more effectively than partitions of masonry or gypsum block.

When metal lath is attached to both sides of these studs, an ideal base for plaster is obtained. There is no necessity for cutting expensive chases for electrical conduits or pipes as the design of these studs provides maximum room for their passage without sacrificing the strength of the studs.

Due to the simplification and light weight of units, labor costs are materially reduced. The adaptability of Truscon Studs permits uninterrupted operation of all trades. After the studs are set, plumbing and electrical work can be started immediately. The partition is then lathed and plastered.

Truscon Hollow Partition Studs when plastered, weigh sixteen to twenty pounds per square foot, depending on the thickness of plaster grounds and consequently permit economical structural design without decreasing strength.

Hollow Partition Studs are fabricated from 16 gauge stock in widths of 3¼″, 4″ and 6″ and lengths up to 20′-0″.

Floor and Ceiling Tracks are of similar design but slightly wider and furnished in standard lengths of 10′-0″.

Studs and Track are furnished painted.

Shoes are 22 gauge 5″ long and four are required for each stud.

TRUSCON Selvedge Edge Cornerite

Truscon Cornerite is a practical and economical reinforcement for all inside plaster corners. Truscon Cornerite is furnished with selvedge edge, and, being machine made, it is straight and true and easy to plaster over.

Furnished in standard sizes of 2 x 2 in. and 3 x 3 in. in 8-ft. 0-in lengths.

Packed 600 lineal feet per bundle.

Weights: 2 x 2 in., 80 lbs. per MLF; 3 x 3 in., 120 lbs per MLF.

TRUSCON Strip-Ite

Truscon Strip-Ite is furnished with selvedge edges in standard widths of 3 in. in 8-ft. 0-in. lengths.

Packed 600 lineal feet per bundle.

Weight: 3 in., 60 lbs.

TRUSCON Cold Rolled Channels

Truscon Cold Rolled Channels are straight and true with square corners that prevent rolling. Flanges are approximately $\frac{7}{16}$ in. high, widths are ¾ and 1½ in., standard lengths 16 and 20 feet. Furnished painted only

¾-in. channels shipped 20 pieces to the bundle.

1½-in. channels shipped 10 pieces to the bundle.

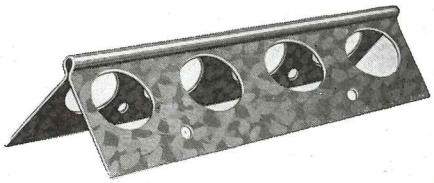
Weights per 1000 lineal feet are as follows: ¾-in. channel, 300 lbs.; 1½-in. channel, 475 lbs.

TRUSCON Rib Steel Corner Bead

Truscon Rib Steel Corner Bead is also recommended as an exposed corner reinforcement and is manufactured from 26 gauge tight coat galvanized steel, with a perforated flange 1¾-in. wide. Rib Steel Bead can be used as an arch bead for curved openings, by cutting the flange, and bending to shape by hand. It forms a perfect arch and will not kink or break at the nose.

Furnished in standard lengths of 8, 9, 10 and 12 feet.

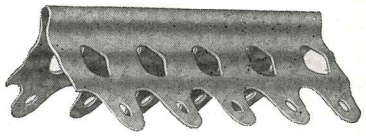
Weight—185 lbs. per thousand lineal feet.



No. 8 Rib Steel Corner Bead

TRUSCON Scalloped Edge Corner Beads

For partitions or furred corners built of metal lath, Scalloped Edge Corner Beads are recommended. The long wing and scalloped edges are designed to give maximum support during construction and will give a better bond after application of plaster. Fabricated from 26 gauge tight coat galvanized steel. Furnished in standard lengths of 8, 9, 10 and 12 feet. Short flange weights, 220 lbs. per thousand lineal feet. Wide flange weights, 320 lbs. per thousand lineal feet.



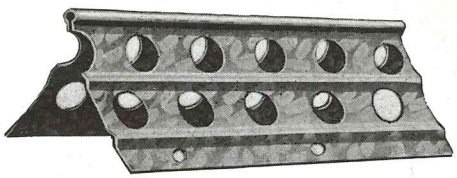
No. 15½ Scalloped Edge Corner Bead

TRUSCON Wide Flange Corner Bead

Truscon Wide Flange Corner Bead is manufactured from 26 gauge tight coat galvanized steel, with a 2½-in. wide flange reinforced with two corrugations spaced 1 in. apart running parallel to its length. Two ⅝-in. diameter holes spaced ½ in. on centers provide exceptional bond for the plaster. This bead is recommended for all kinds of masonry walls, columns, or beams (Gypsum Block, brick, tile or concrete) because it will allow a plumb straight line to be formed, and due to the long flange can be erected quicker, and will not be pushed out of alignment.

Furnished in standard lengths of 8, 9, 10 and 12 feet.

Weight—330 lbs. per thousand lineal feet.



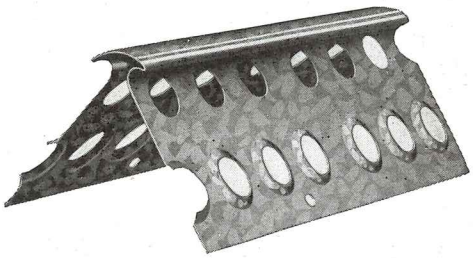
No. 12 Wide Flange Corner Bead

TRUSCON Expanded Corner Bead

Truscon Expanded Corner Bead is used to protect exposed plaster corners and is manufactured from 36 gauge tight coat galvanized steel, with a 2½-in. expanded flange and a heavy shoulder to assure straightness and rigidity. The round nose is strongly reinforced by a deep groove which holds the plaster flush for a perfect bond. Real economies are possible in labor costs in the erection of Truscon Expanded Corner Bead. It can be wired, stapled, nailed, or "stuck" to any kind of wall construction without the use of clips.

Furnished in standard lengths of 8, 9, 10 and 12 feet.

Weight—230 lbs. per thousand lineal feet.

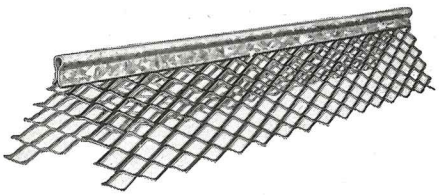


No. 14 Bull Nose Corner Bead
¾" Radius

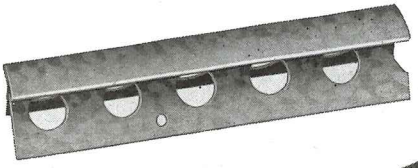
TRUSCON Bull Nose Corner Beads

Used principally to protect plaster at exposed corners and as window casings. Especially recommended for use in corridors of hospitals, schools, and similar buildings where traffic is unusually heavy. Bull Nose Corner Bead is furnished in standard lengths of 7, 8, 9, 10 and 12 feet. Short flange 255 lbs. per M lineal feet. Wide flange 375 pounds per M lineal feet.

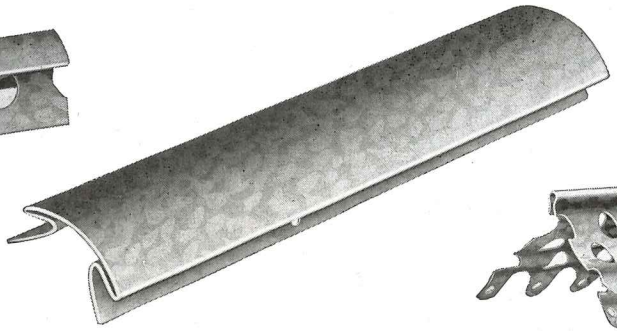
1½" Radius No. 607—390 lbs. per M lineal feet.



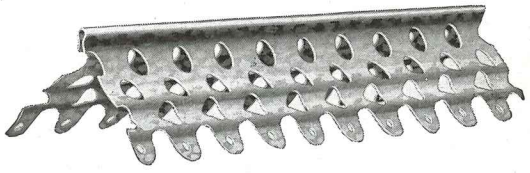
No. 7 Expanded Corner Bead



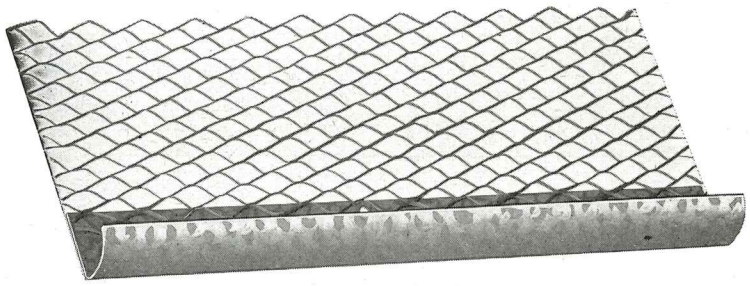
No. 604 Bull Nose Corner Bead
¾" Radius



No. 607 Bull Nose Corner Bead
1½" Radius

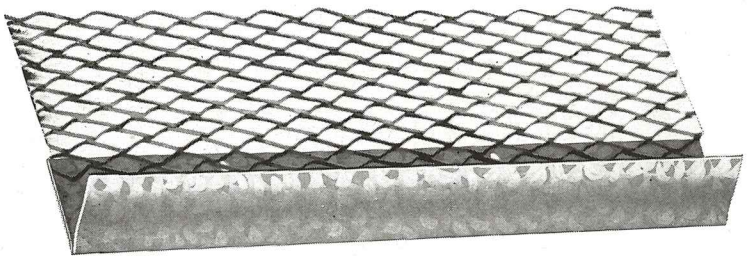


No. 16 Scalloped Edge Corner Bead



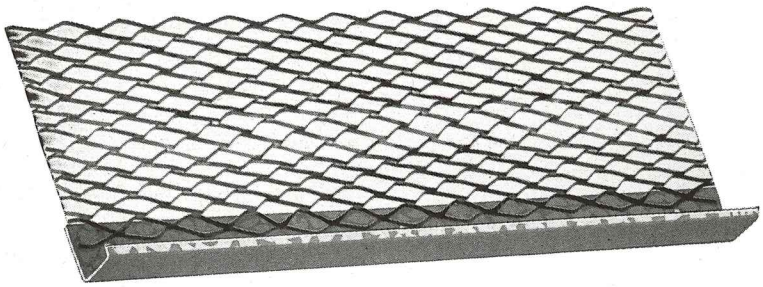
No. 72 Wide Flange Casing

No. 36 Short Flange Casing



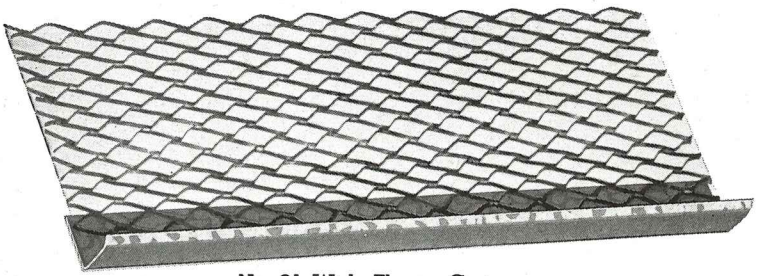
No. 70 Wide Flange Casing

No. 40 Short Flange Casing



No. 34½ Wide Flange Casing

No. 35½ Short Flange Casing



No. 81 Wide Flange Casing

No. 31 Short Flange Casing

TRUSCON Casings

Metal casings meet a definite demand for an artistic and yet strictly sanitary method of trimming around doors and windows. Metal casings are fire-resistant, vermin proof, easy to maintain and do not shrink or warp. All styles of casings are straight and uniform, affording perfect mitres at corners.

Truscon casings are available in short and wide flange types. The short flange casings are designed to be used on lathed walls or partitions and in this case the lath is merely lapped over the short nailing flange. They should not be used without lath.

The wide flanged casings are designed to key the plaster over a rough buck. They are made to meet the varying widths of bucks and it is important that a casing be selected which will entirely cover the buck. The type of expanded flange used is semi-flexible and absorbs effectively all normal shocks and vibrations.

In using flush-with-the-plaster casings, a holding clip (No. 45—illustrated on opposite page) is recommended. This clip holds the nose of the casing tight against the jamb or buck by virtue of spring tension.

Casings are furnished in ½-in. and ¾-in. grounds made from tight coat galvanized 22 gauge steel and furnished in lengths of 7, 8, and 10 feet.

TRUSCON Curved Point Base Screed

Truscon Curved Point Base Screed is manufactured from 26 gauge tight coat galvanized steel. This product is designed to form a smooth curved top for protecting plaster bases of terrazzo, cement or composition, and to protect the top of the base against damage. Curved Point Base Screed also forms a permanent separation between the two materials, and a working line for both in the same manner as Flush Base Screed.

Furnished in standard lengths of 10 ft. 0 in.

Packed 100 pieces per crate.

Weight: 195 lbs. per thousand lineal feet.

TRUSCON Flush Base Screed

Truscon Flush Type Base Screed is manufactured from 26 gauge tight coat galvanized steel. It is used principally for separating two plaster materials of different character, such as separating plaster walls from cement, terrazzo, or composition base, and separating a cement wainscot from ordinary plaster. Another function is to give a permanent straight edge to which both the trades work.

Furnished in standard lengths of 10 ft. 0 in.

Packed 100 pieces per crate.

Weight: 160 lbs. per thousand lineal feet.

TRUSCON Picture Mold

Truscon Picture Molding is used primarily to support pictures and other hanging objects on walls; secondly it provides a dividing line at or near the ceiling for decorative purposes. It provides a recessed groove formed at the proper angle to support a picture hook and in addition serves as a screed to which the plasterer can work. Manufactured from 26 gauge tight coat galvanized steel and furnished in 10′ lengths.

TRUSCON Partition Cap No. 700

Used at ends of 2″ solid plaster partitions, the large rounded heads give maximum protection. Also adaptable as a hand railing on plaster stairways. Face of Partition Cap is fabricated from 16 gauge tight coat galvanized steel. Lengths to order.

TRUSCON Molding No. 51

Metal Molding No. 51 is used between round nose casings and the finish jamb to cover the joint. In addition this molding makes an ideal strip at the juncture of wall and floor. Made from 20 gauge tight coat galvanized steel and furnished in 10′ lengths.

TRUSCON Tie and Hanger Wire

Made from special quality soft annealed wire strengthened by a special process. Tie wire furnished in 16 and 18 gauge galvanized — 25-pound hanks or coils. Hanger wire furnished in No. 8 gauge galvanized coils.

PACKING INFORMATION

Plain Wing, Wide Flange and Expanded Corner Bead

Length	Pcs. per Carton	Feet per Carton
8′-0″	70	560
9′-0″	60	540
10′-0″	50	500
12′-0″	50	600

Furnished in cartons only.

No. 604 and 607 Bull Nose Corner Bead

Length	Pcs. per Carton	Feet per Carton
7′-0″	80	560
8′-0″	70	560
9′-0″	60	540
10′-0″	50	500
12′-0″	50	600

No. 14 Bull Nose Corner Bead

Length	Pcs. per Carton	Feet per Carton
7′-0″	50	350
8′-0″	50	400
9′-0″	40	360
10′-0″	35	350
12′-0″	35	420

Cornerite and Stripite

2″ x 2″ x 96″ Cornerite	600 Ft. per Bdl.
3″ x 3″ x 96″ Cornerite	600 Ft. per Bdl.
3″ x 96″ Stripite	600 Ft. per Bdl.

Furnished in bundles only.

Standard and Expanded Flange Casings

Length	Pcs. per Crate	Feet per Crate
7′-0″	80	560
8′-0″	70	560
10′-0″	50	500

No. 1 and 49 Base Screed, Cove Mold and Picture Mold

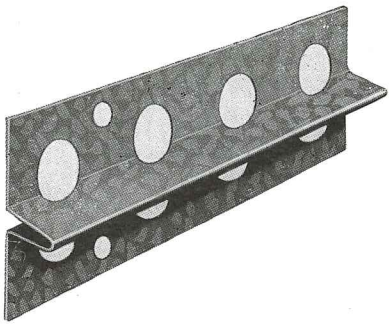
Length	Pcs. per Carton	Feet per Carton
10′-0″	100	1000

No. 3 Base Screed

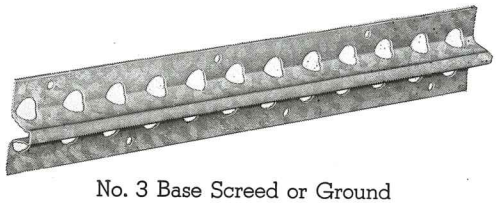
10′-0″	50	500

STYLE	Size of Sheet	Sheets per Bdl.	Sq. Yds. Bdl.
Diamond Lath (Std. or Small Mesh)	27″ x 96″	10	20
Diamond Lath (Std. or Small Mesh)	24″ x 96″	9	16
Herringbone Doublemesh	27″ x 96″	10	20
⅜″ Ribplex	24″ x 96″	9	16
Bostwick Sheet Lath	24″ x 96″	9	16

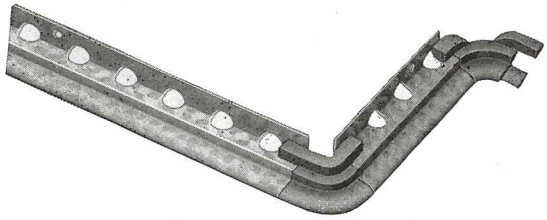
Self-Sentering is 29″ wide by 6′, 8′, 10′ or 12′ long. Trussit lath is 19″ wide by 8′ 10′ or 12′ long. Bundled 10 pieces to a bundle.



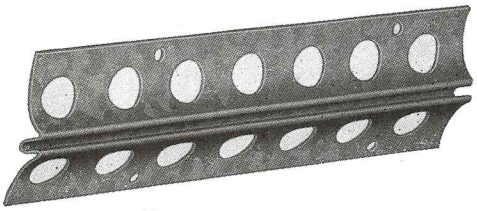
No. 1 Base Screed — Flush Type



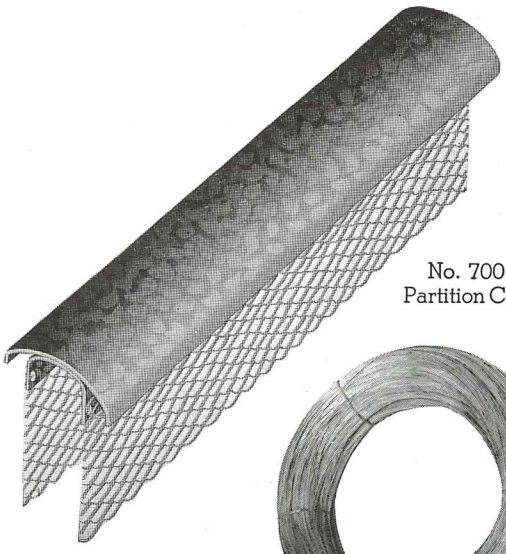
No. 3 Base Screed or Ground



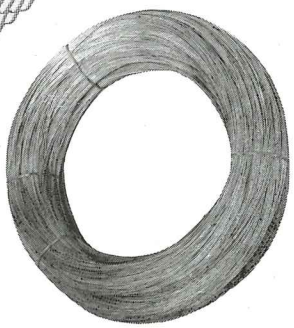
No. 49 Curved Point Base Screed With Corner Fittings



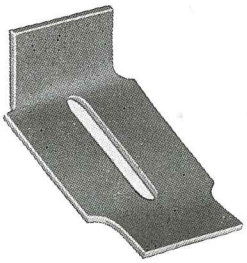
No 23 Picture Mold



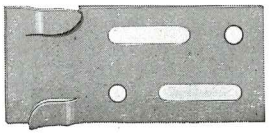
No. 700 Partition Cap



Tie Wire

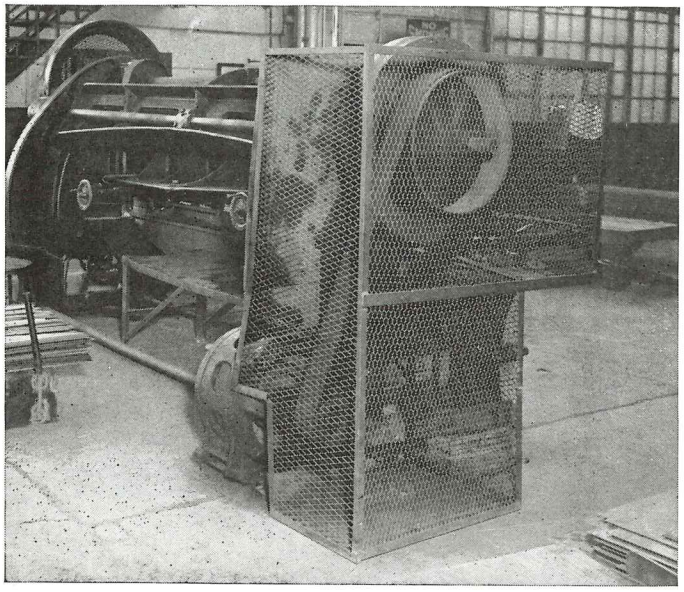


No. 45 Casing Clip



No. 46 Corner Bead Clip

No. 51 Molding



Truscon Expanded Metal is a diamond mesh fabric expanded into flat sheets from a solid plate of low carbon open hearth steel. The steel is cut and drawn so that regular and even diamonds are formed with uniform strands.

Truscon Expanded Metal is a utility product and can be employed in diversified uses when the nature of the work requires an open mesh material that is strong, light in weight, easy to handle and rigid but workable.

Machine guards, door grilles, partitions, window guards, and similar enclosures are easily fabricated from the smaller size mesh.

TYPES AND PROPERTIES

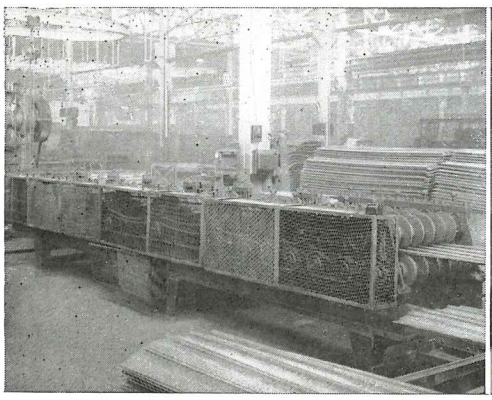
Type Number	Size of Diamond C-C of Strand	Gauge	Weight Lbs. per sq. ft.	Standard Sizes of Sheets		Cross Sectional Area
				Lengths Long Way of Diamond	Widths Short Way of Diamond	
1⅜-06	1⅜" x 3"	17	.20	8′	2′, 4′	.06
1⅜-12	1⅜" x 3"	17	.40	8′	2′, 4′	.12
½-22	½" x 1.2"	18	.74	6′, 8′	3′, 4′-6"	.22
¾-15	¾" x 2"	16	.51	6′, 8′	4′-4", 6′-6"	.15
¾-24	¾" x 2"	12	.80	6′, 8′	4′-4", 6′-6"	.24
¾-35	¾" x 2"	10	1.19	6′, 8′	3′, 4′-6"	.35
1⅜-18	1⅜" x 3"	12	.60	6′, 8′	3′, 4′-6", 6′	.18
1⅜-24	1⅜" x 3"	12	.80	6′, 8′	3′-6", 7′	.24
1⅜-35	1⅜" x 3"	10	1.19	6′, 8′	3′, 4′, 6′	.35

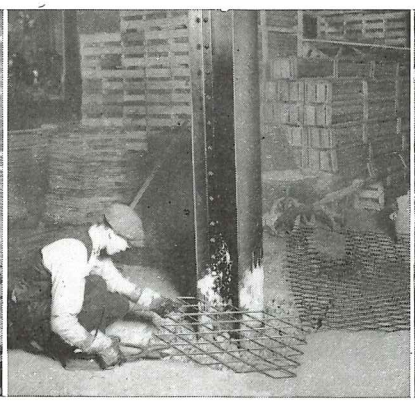
Furnished plain, painted, enameled, bonderized, galvanized or expanded from aluminum and stainless steel.

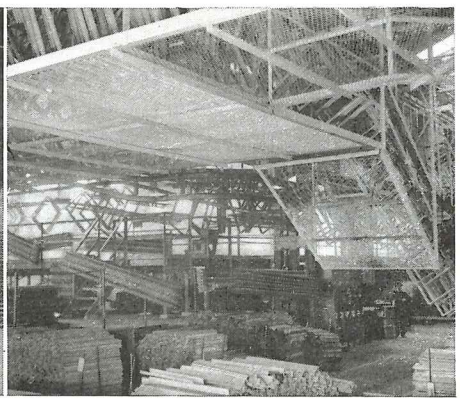
OTHER USES FOR TRUSCON EXPANDED METAL

In addition to the more general uses illustrated, Truscon Expanded Metal can be economically used in the manufacture of such products as:

TREE BOXES
REFUSE BURNERS
HOT AIR REGISTERS
AIR FILTERS
LOUVERS
WASTE BASKETS
RADIATOR COVERS
TRUCK BODY ENCLOSURES
GLOBE PROTECTORS for ELECTRIC LIGHTS

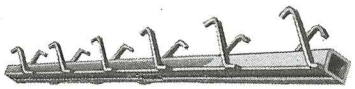






TRUSCON PRESSED STEEL INSERTS

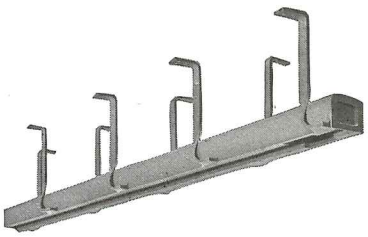
SLOTTED INSERTS



Truscon Slotted Inserts are attached to the forms and are completely embedded in the concrete construction. Only the narrow slot flush with the concrete is seen in the completed work. The bolt can be moved along this slot to any location, allowing wide variation in position. Truscon Slotted Inserts are used with equal success in ceilings, slabs, beams or columns. The anchors are integral with the insert and occur every 6 in. on each side.

Standard lengths 12, 18, 24, 36, 48 and 60 in. Any desired length or run is obtained by removing end caps and butting the open ends together.

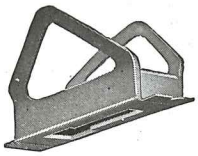
BRICK INSERTS



Truscon Brick Slotted Inserts have all the qualities and properties of Truscon Concrete Slotted Inserts.

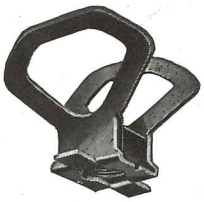
The prongs are so bent that they provide positive anchorage of the insert to masonry. They are furnished in standard lengths of 12, 18, 24, 36, 48 and 60 in.

ADJUSTABLE INSERTS



Truscon Adjustable Inserts are made of pressed steel and have the same simple method of application to concrete and adjustment for bolts as the slotted inserts, but without their wide range of adjustability. Carry ½, ⅝ and ¾-in. bolts.

TAPPED INSERTS



Truscon Tapped Inserts are made from pressed steel of highest quality, and furnished tapped for ⅜, ½, ⅝ and ¾-in. bolts. Particularly adapted for work where arrangement has been determined before start of construction. Where required, this type of insert can be furnished tapped for ½ in. pipe.

CARRYING CAPACITIES

PATENT OFFICE
JUL 15 1949
DESIGN DIVISION

Since the supporting capacity of inserts is largely dependent on strength of the concrete and bolts we cannot guarantee any particular loading. The following working loads have been determined by tests and give a factor of safety of at least four.

Inserts	For average good concrete
Slotted Inserts	2000 lbs. per lin. ft.
Adjustable Inserts: ½ in.	800 lbs. per insert
Adjustable Inserts: ⅝ and ¾ in.	1300 lbs. per insert
Tapped Inserts: All sizes	1500 lbs. per insert

TRUSCON STEEL BARS FOR REINFORCING

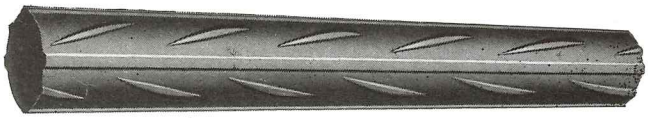
CONCRETE REINFORCING BARS

Concrete Reinforcing Bars are special rolled sections of high grade steel with a series of longitudinal and diagonal ribs so designed as to provide the maximum bond with the enclosing concrete.

Concrete bars are used for the reinforcement of concrete slabs, beams and girders, columns, walls and footings, in the construction of buildings, bridges, tanks and all other concrete structures subject to tension and compression stresses.

Our concrete bar fabricating plants are strategically located throughout the country in order to economically serve our customers. Bars are fabricated in these plants to meet the engineering requirements of individual jobs. They are delivered to the job cut to length, bent, bundled and properly tagged. If desired, our engineering department furnishes completely detailed placing drawings for the convenience of the steel erectors.

The standard sizes listed have been adopted by all producers in cooperation with the Division of Simplified Practice of the U. S. Department of Commerce. They eliminate duplications of equivalent areas and meet every requirement of efficient design.

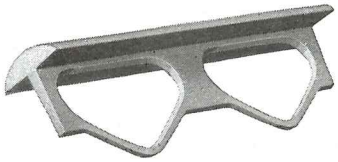


STANDARD SIZES OF DEFORMED BARS

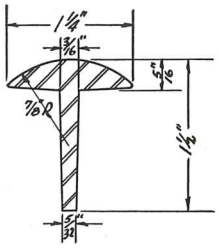
Square inches Area	Equivalent to	Weight per lineal foot
.05	¼″ round*	.167 lbs.
.11	⅜″ round	.376 lbs.
.20	½″ round	.668 lbs.
.31	⅝″ round	1.043 lbs.
.44	¾″ round	1.502 lbs.
.60	⅞″ round	2.044 lbs.
.79	1″ round	2.670 lbs.
1.00	1″ square	3.400 lbs.
1.27	1⅛″ square	4.303 lbs.
1.56	1¼″ square	5.313 lbs.

* Plain round.

TRUSCON CURB BARS



Curb Bar



By protecting the upper outside corner of a concrete curb with a satisfactory steel plate the curb becomes superior in appearance and more wear-resisting.

Curb bars are manufactured from a specially designed rolled steel section embodying the following distinctive features:

1. Ample width (1-5/6 in.) and thickness of exposed plate.
2. Edges of plate beveled to prevent any possibility of feather edge forming at junction of concrete and plate.
3. Plate surrounds and protects the corner without splitting the concrete into two portions.
4. Absolute anchorage into the concrete.
5. Unit of plate and anchors, both formed from the same section of steel.

Furnished in stock lengths of 10 ft.

TRUSCON

EXECUTIVE OFFICES AND MAIN PLANT • YOUNGSTOWN 1, OHIO

SUBSIDIARY OF REPUBLIC STEEL CORPORATION

FACTORIES: CLEVELAND, OHIO • CANTON, OHIO • GADSDEN, ALA. • WALKERVILLE, ONT., CANADA

PRESSED STEEL DIVISION: 6100 TRUSCON AVENUE, CLEVELAND 4, OHIO

EXPORT DEPARTMENT: CHRYSLER BUILDING, 405 LEXINGTON AVENUE, NEW YORK 17, NEW YORK

RETURN TO DESIGN DIV.

SALES OFFICES

ALBANY 7, N. Y., 75 State Street
ATLANTA 3, GA., 610 Rhodes-Haverty Building
BALTIMORE 11, MD., 330 W. 24th Street
BIRMINGHAM 3, ALA., 229 American Life Building
BOSTON 27 (South), MASS., 307 Dorchester Avenue
BUFFALO 3, N. Y., 1426 Rand Building
CHARLESTON, W. VA., 612 Atlas Building
CHATTANOOGA 1, TENN., 19th and Grove Streets
CHICAGO 6, ILL., 201 No. Wells Street
CINCINNATI 2, OHIO, 330 Dixie Terminal Building
CLEVELAND 15, OHIO, 735 Hanna Building Annex
COLUMBUS 15, OHIO, 818-821 Atlas Building
DALLAS 1, TEXAS, 314 Construction Building
DAYTON 2, OHIO, 44 So. Ludlow Street
DENVER 2, COLO., 228 Patterson Building
DETROIT 26, MICH., 615 Wayne Street
ERIE, PA., 215 Hayes Building
GREENSBORO, N. C., 935 Jefferson Standard Building
HARRISBURG, PA., 410 No. Second Street
HOUSTON 11, TEXAS, 501 N. Greenwood Street
INDIANAPOLIS 3, IND., 398 Division Street
JACKSONVILLE 2, FLA., 301 Hildebrandt Building
KANSAS CITY 6, MO., 1012 Baltimore Avenue
LITTLE ROCK, ARK., 812-13 Union Life Building
LOS ANGELES 54, CALIF., P. O. Box 3699 Terminal Annex Station
LOUISVILLE 1, KY., 1032 S. Eighth Street
MEMPHIS 5, TENN., 269 Walnut Street
MINNEAPOLIS 2, MINN., 246 Baker Building
NEW ORLEANS 12, LA., 1143 Canal Bank Building
NEW YORK 17, N. Y., 155 E. 44th Street
NORFOLK 10, VA., 518 Dickson Building
OKLAHOMA CITY 2, OKLA., 601½ Colcord Drive
OMAHA 2, NEB., 806-07 Insurance Building
PHILADELPHIA 3, PA., 1616 Walnut Street
PHOENIX, ARIZ., 303 Luhrs Building
PITTSBURGH 22, PA., 2544 Oliver Building
PORTLAND 12, ORE., 2139 N. Kerby Avenue
POTTSVILLE, PA., 1541 Howard Avenue
RICHMOND, VA., 122 N. 8th Street
ST. LOUIS 3, MO., 8th Floor Shell Building
SALT LAKE CITY 10, UTAH, 1526 So. West Temple St.
SAN FRANCISCO 5, CALIF., 604 Mission Street
SEATTLE 4, WASH., 757 Central Building
SYRACUSE 2, N. Y., 303 Syracuse-Kemper Insurance Building
TOLEDO 4, OHIO, 220 Richardson Building
WASHINGTON 5, D. C., 700 Investment Building
YOUNGSTOWN 1, OHIO, 1315 Albert Street

PATENT OFFICE JUL 15 1949 DESIGN DIVISION
PATENT OFFICE JUL 15 1949 DESIGN DIVISION

WAREHOUSES

BALTIMORE, MD.
BOSTON, MASS.
BUFFALO, N. Y.
CHATTANOOGA, TENN.
CHICAGO, ILL.
CINCINNATI, OHIO
CLEVELAND, OHIO
DENVER, COLO.
DETROIT, MICH.
GADSDEN, ALA.
HARRISON, N. J.
HOUSTON, TEXAS
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.
KANSAS CITY, MO.
LONG ISLAND CITY, N. Y.
LOS ANGELES, CALIF.
PHILADELPHIA, PA.
PITTSBURGH, PA.
PORTLAND, ORE.
SAN FRANCISCO, CALIF.
ST. LOUIS, MO.
YOUNGSTOWN, OHIO

Printed in U.S.A.